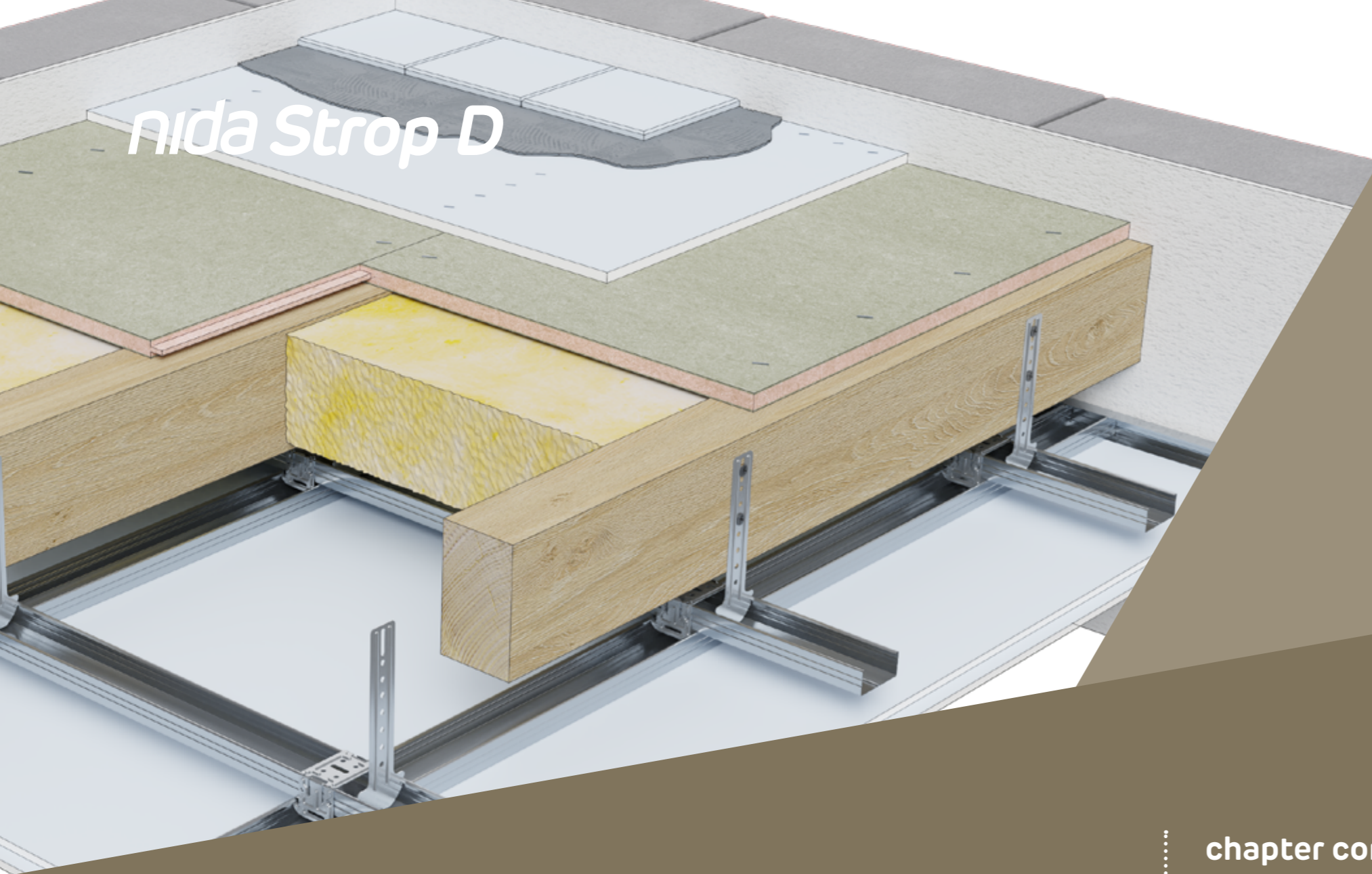


Nida Strop D



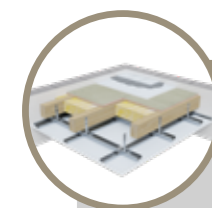
fire protection for timber floors

The Nida Strop D fire protection system for timber floors provides protection for all the timber structure floors depending on the requirements with respect to the direction of fire exposure (from the top, from the bottom, or from both the sides) according to the fire resistance class REI30 ÷ REI120. The upper fire protection was based on the innovative DURIPANEL B1

(reaction to fire class B) and DURIPANEL A2 (reaction to fire class A2) cement-particle boards, which can function as load-bearing floor filling. Protection from the bottom is provided with utilisation of the standard ceiling partitioning systems, which are not complicated, common and based on the standard Nida Ogień Plus type DF plasterboards.

chapter contents

- 1116** G18/DPB1; G19/DPA2; G20/DPB1; G22/DPA2
- 1118** G18/DPB1/C; G19/DPA2/C
- 1120** G22/DPB1; G18/DPB1; G22/DPA2; G19/DPA2; G40/DPB1; G24/DPB1; G38/DPA2
- 1122** G18/DPB1/C; G19/DPA2/C; G22/DPB1/C; G22/DPA2/C;
- 1124** G18/DPB1; G32/DPB1; G36/DPB1; G64/DPB1; G19/DPA2; G25/DPA2; G32/DPA2; G56/DPA2
- 1126** G24/DPB1/C; G22/DPA2/C; G20/DPB1/C; G19/DPA2/C; G40/DPB1/C; G32/DPB1/C; G36/DPA2/C; G28/DPA2/C
- 1128** G36/DPB1; G40/DPB1; G56/DPB1; G64/DPB1; G80/DPB1; G32/DPA2; G38/DPA2; G44/DPA2; G48/DPA2
- 1130** G40/DPB1/C; G44/DPB1/C; G64/DPB1/C; G38/DPA2/C; G40/DPA2/C; G56/DPA2/C
- 1132** D12,5/OGIEŃ+; D15/OGIEŃ+; D18/OGIEŃ+; D25/OGIEŃ+; D25/KOMPAKT
- 1134** D25/OGIEŃ+; D25/KOMPAKT; D30/OGIEŃ+
- 1136** D30/OGIEŃ+; D37,5/OGIEŃ+; D37,5/OGIEŃ+KOMPAKT; D40/KOMPAKT; D50/OGIEŃ+; D50/KOMPAKT
- 1138** D37,5/OGIEŃ+; D37,5/OGIEŃ+KOMPAKT; D50/OGIEŃ+; D50/KOMPAKT; D60/OGIEŃ+; D60/KOMPAKT
- 1140** G18/DPB1-D15/OGIEŃ+; G19/DPA2-D15/OGIEŃ+; G20/DPB1-D25/OGIEŃ+; G20/DPB1-D25/KOMPAKT; G22/DPA2-D25/OGIEŃ+; G22/DPA2-D25/KOMPAKT; G18/DPB1-D18/OGIEŃ+; G19/DPA2-D18/OGIEŃ+
- 1142** G18/DPB1-C-D25/OGIEŃ+; G18/DPB1-C-D25/KOMPAKT; G19/DPA2-C-D25/OGIEŃ+; G19/DPA2-C-D25/KOMPAKT
- 1144** G22/DPB1-D25/OGIEŃ+; G22/DPB1-D25/KOMPAKT; G18/DPB1-D25/OGIEŃ+; G18/DPB1-D25/KOMPAKT; G22/DPA2-D25/OGIEŃ+; G22/DPA2-D25/KOMPAKT; G19/DPA2-D25/OGIEŃ+; G19/DPA2-D25/KOMPAKT; G28/DPB1-D30/OGIEŃ+; G24/DPB1-D30/OGIEŃ+; G25/DPA2-D30/OGIEŃ+; G22/DPA2-D30/OGIEŃ+
- 1146** G18/DPB1-C-D30/OGIEŃ+; G19/DPA2-C-D30/OGIEŃ+; G22/DPB1-C-D30/OGIEŃ+; G22/DPA2-C-D30/OGIEŃ+
- 1148** G32/DPB1-D37,5/OGIEŃ+; G28/DPB1-D37,5/OGIEŃ+; G28/DPA2-D37,5/OGIEŃ+; G25/DPA2-D37,5/OGIEŃ+; G40/DPB1-D50/OGIEŃ+; G36/DPB1-D40/KOMPAKT; G38/DPA2-D50/OGIEŃ+; G32/DPA2-D40/KOMPAKT
- 1150** G24/DPB1-C-D37,5/OGIEŃ+; G22/DPA2-C-D37,5/OGIEŃ+; G20/DPB1-C-D30/OGIEŃ+; G19/DPA2-C-D30/OGIEŃ+; G40/DPB1-C-D50/OGIEŃ+; G32/DPB1-C-D40/KOMPAKT; G36/DPA2-C-D50/OGIEŃ+; G28/DPA2-C-D40/KOMPAKT
- 1152** G48/DPB1-D50/OGIEŃ+; G40/DPB1-D50/OGIEŃ+; G40/DPA2-D50/OGIEŃ+; G38/DPA2-D50/OGIEŃ+; G36/DPB1-D37,5/OGIEŃ+; G32/DPA2-D37,5/OGIEŃ+; G64/DPB1-D50/OGIEŃ+; G56/DPB1-D37,5/OGIEŃ+; G48/DPA2-D50/OGIEŃ+
- 1154** G44/DPB1-C-D50/OGIEŃ+; G38/DPA2-C-D50/OGIEŃ+; G40/DPB1-C-D50/OGIEŃ+; G32/DPA2-C-D50/OGIEŃ+; G56/DPB1-C-D60/OGIEŃ+; G44/DPB1-C-D50/OGIEŃ+; G48/DPA2-C-D60/OGIEŃ+; G40/DPA2-C-D50/OGIEŃ+



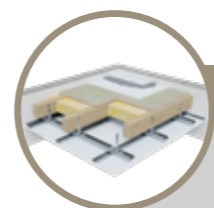
Page	System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board		Sheathing from the top side - Cement board (bonding layer)		Sheathing from the bottom side - plasterboard		Insulation material		Static parameters - conditioning		Mass of encase-ment ²⁾	Fire resistance class	Special system			
		width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Name	Thickness	Density	Coefficient of effort				Cross-section modulus		
																		[mm]	[mm]
THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CERAMIC TILES, PARQUET)																			
1143	G18/DPB1/C-D12/Ogień+	≥ 40	≥ 40	Duripanel B1	18	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	53,5	REI30	●
1143	G19/DPA2/C-D25/Ogień+	≥ 40	≥ 40	Duripanel A2	19	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	56,7	REI30	●
1147	G18/DPB1/C-D30/Ogień+	≥ 50	≥ 50	Duripanel B1	18	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	equal to h-of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	49,5	REI60	●
1147	G19/DPA2/C-D30/Ogień+	≥ 50	≥ 50	Duripanel A2	19	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	equal to h-of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	52,7	REI60	●
1147	G22/DPB1/C-D30/Ogień+	60 ÷ 99	60 ÷ 99	Duripanel B1	22	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	- ²⁾	- ²⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	54,5	REI60	●
1147	G18/DPB1/C-D30/Ogień+	≥ 100	≥ 100	Duripanel B1	18	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	- ²⁾	- ²⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	49,5	REI60	●
1147	G22/DPA2/C-D30/Ogień+	50 ÷ 59	50 ÷ 59	Duripanel A2	22	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	- ²⁾	- ²⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	56,7	REI60	●
1147	G19/DPA2/C-D30/Ogień+	≥ 60	≥ 60	Duripanel A2	19	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	- ²⁾	- ²⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	52,7	REI60	●
1151	G24/DPB1/C-D37,5/Ogień+	80 ÷ 99	80 ÷ 99	Duripanel B1	24	1250,0	Cementex	8	1387,0	Ogień Plus	3 x 12,5 ¹⁾	800,0	equal to h-of beam	50,0	1,0	1,0 ÷ 0,25	71,0	REI90	●
1151	G22/DPA2/C-D37,5/Ogień+	80 ÷ 99	80 ÷ 99	Duripanel A2	22	1350,0	Cementex	8	1387,0	Ogień Plus	3 x 12,5 ¹⁾	800,0	equal to h-of beam	50,0	1,0	1,0 ÷ 0,25	70,7	REI90	●
1151	G20/DPB1/C-D30/Ogień+	≥ 100	≥ 100	Duripanel B1	20	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 15	800,0	equal to h-of beam	50,0	1,0	1,0 ÷ 0,25	52,0	REI90	●
1151	G19/DPA2/C-D30/Ogień+	≥ 100	≥ 100	Duripanel A2	19	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 15	800,0	equal to h-of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	63,7	REI90	●
1151	G40/DPB1/C-D50/Ogień+	≥ 40	≥ 40	Duripanel B1	40	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	101,0	REI90	●
1151	G32/DPB1/C-D40/Kompakt	≥ 100	≥ 100	Duripanel B1	32 ¹⁾	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 20	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,5	84,4	REI90	●
1151	G36/DPA2/C-D50/Ogień+	≥ 40	≥ 40	Duripanel A2	22 + 16	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	102,3	REI90	●

¹⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 2x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).

²⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm + Nida Ogień Plus type DF 1x12,5 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).

³⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.

⁴⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).



Page	System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board		Sheathing from the top side - Cement board (bonding layer)		Sheathing from the bottom side - plasterboard		Insulation material		Static parameters - conditioning		Mass of encase-ment ²⁾	Fire resistance class	Special system			
		width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Name	Thickness	Density	Coefficient of effort				Cross-section modulus		
																		[mm]	[mm]
1151	G28/DPA2/C-D40/Kompakt	≥ 100	≥ 100	Duripanel A2	28 ¹⁾	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 20	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,5	82,2	REI90	●
1155	G44/DPB1/C-D50/Ogień+	50 ÷ 79	50 ÷ 79	Duripanel B1	2 x 22	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h-of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	106,0	REI120	●
1155	G38/DPA2/C-D50/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel A2	22 + 16	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h-of beam	50,0	1,0 ÷ 0,8	1,0 ÷ 0,25	102,3	REI120	●
1155	G40/DPB1/C-D50/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel B1	40	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h-of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	101,0	REI120	●
1155	G32/DPA2/C-D50/Ogień+	60 ÷ 99	60 ÷ 99	Duripanel A2	32	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h-of beam	50,0	1,0 ÷ 0,8	1,0 ÷ 0,25	94,2	REI120	●
1155	G56/DPB1/C-D60/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel B1	40 + 16	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 15 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	124,0	REI120	●
1155	G44/DPB1/C-D50/Ogień+	≥ 100	≥ 100	Duripanel B1	2 x 22	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	- ⁴⁾	- ⁴⁾	1,0	1,0 ÷ 0,25	106,0	REI120	●
1155	G48/DPA2/C-D60/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel A2	32 + 16	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 15 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	129,8	REI120	●
1155	G40/DPA2/C-D50/Ogień+	≥ 100	≥ 100	Duripanel A2	22 + 19	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	- ⁴⁾	- ⁴⁾	1,0	1,0 ÷ 0,25	106,4	REI120	●

¹⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 2x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).

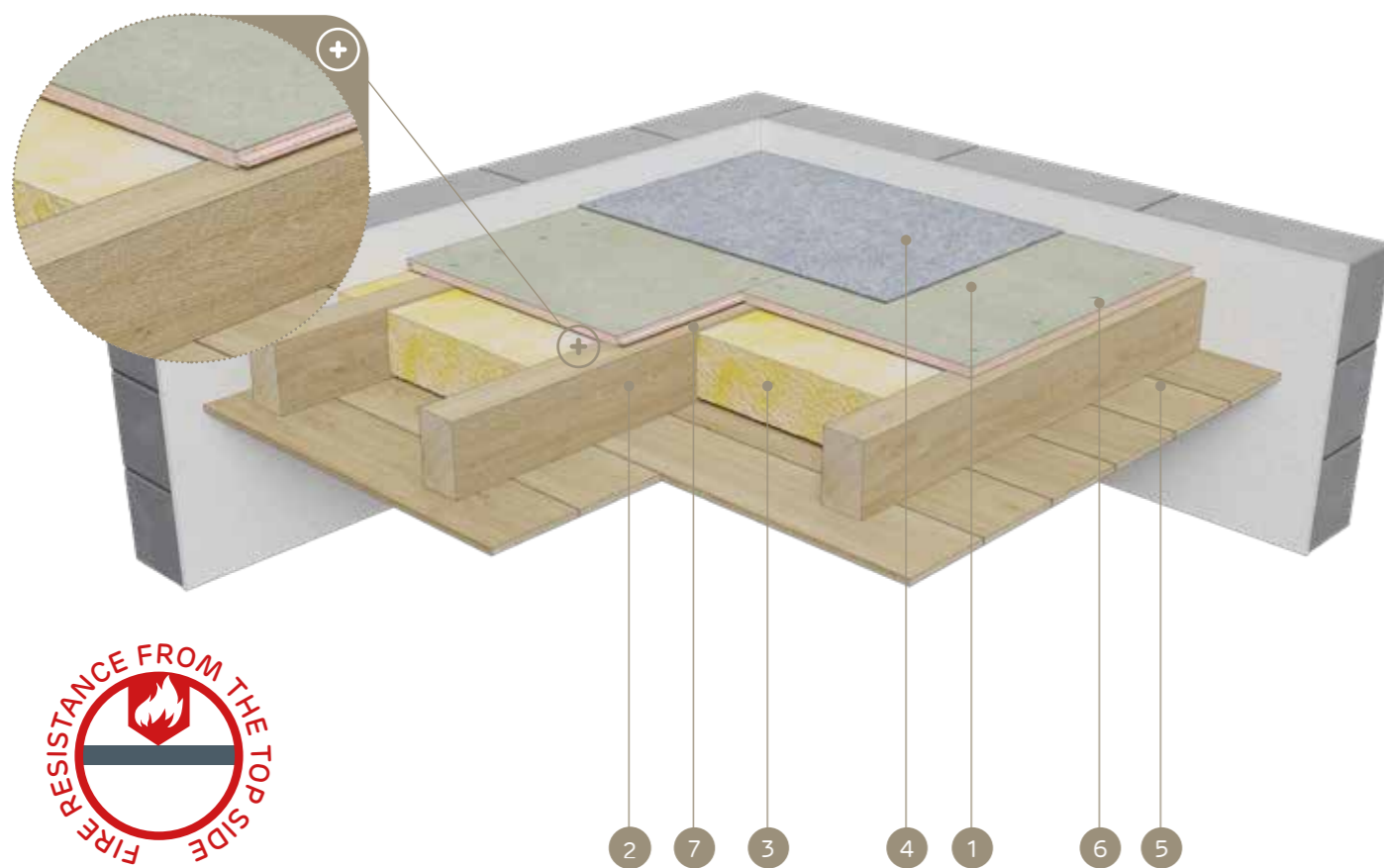
²⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm + Nida Ogień Plus type DF 1x12,5 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).

³⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.

⁴⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

nida Strop DFire resistance class:
REI30Coefficient of effort α_{M} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
22,5-29,7 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163N3P

SYSTEMS:

G18/DPB1; G19/DPA2; G20/DPB1; G22/DPA2

THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE TOP SIDE (SURFACE FINISH - CARPET, FLOATING FLOOR)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m ²]	Fire resistance class [min]	Special system
	width - b	height - h	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort [α_M]	Cross-section modulus b/h			
	[mm]	[mm]		[mm]	[kg/m ³]	[mm]	[kg/m ³]					
G18/DPB1	≥ 40	≥ 40	Duripanel B1	18	1250,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	22,5	REI30	●
G19/DPA2	≥ 40	≥ 40	Duripanel A2	19	1350,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	25,7	REI30	●
G20/DPB1	≥ 40	≥ 40	Duripanel B1	20	1250,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	25,0	REI30	●
G22/DPA2	≥ 40	≥ 40	Duripanel A2	22	1350,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	29,7	REI30	●
G18/DPB1	≥ 40	≥ 40	Duripanel B1	18 ¹⁾	1250,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	22,5	REI30	●
G19/DPA2	≥ 40	≥ 40	Duripanel A2	19 ¹⁾	1350,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	25,7	REI30	●

¹⁾ The floor was protected from the bottom side with the Nida Ogień Plus board of min. thickness 12.5 mm.

²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.

³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163N3P.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D			
		G18/DPB1	G19/DPA2	G20/DPB1	G22/DPA2
		Consumption of material per 1m ²			
Duripanel B1 board 16 mm	m ²	1,0	-	-	-
Duripanel A2 board 16 mm	m ²	-	1,0	-	-
Duripanel B1 board 20 mm	m ²	-	-	1,0	-
Duripanel A2 board 22 mm	m ²	-	-	-	1,0
Duripanel board screws	pcs.	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾

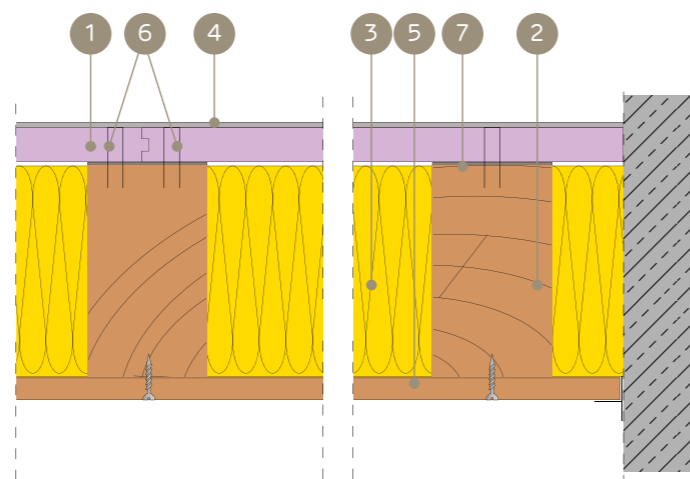
⁴⁾ Optionally, it is possible to utilise galvanised steel staples.

⁵⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.

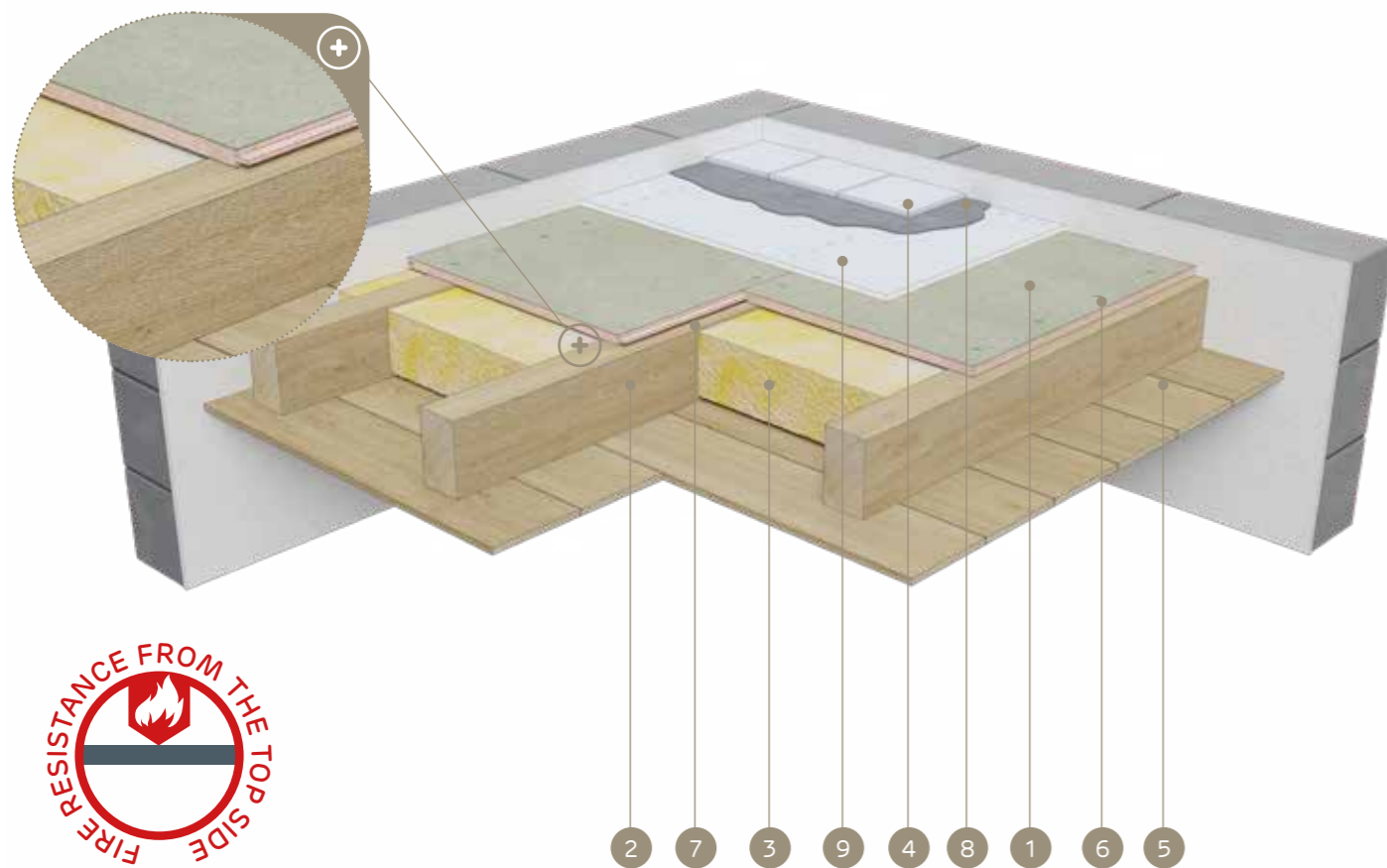
MATERIALS:

1. Duripanel cement-particle board
2. Timber floor beams
3. Insulation material mineral wool
4. Floor finish (carpet, or floating floor)
5. Ceiling finish (timber boards, or Nida plasterboard)
6. Duripanel board screws, or steel staples
7. Sealing tape for Nida acoustic insulation



nida Strop DFire resistance class:
REI30Coefficient of effort α_{w} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
33,5-36,7 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163NZIP

SYSTEMS:

G18/DPB1/C; G19/DPA2/C

THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE TOP SIDE (SURFACE FINISH - CERAMIC TILES, PARQUET)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the top side - Cement-particle board			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m ²]	Fire resistance class [min]	Special system
	width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus			
	[mm]	[mm]		[mm]	[kg/m ³]		[mm]	[kg/m ³]							
G18/DPB1/C	≥ 40	≥ 40	Duripanel B1	18	1250,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	33,5	REI30	●
G19/DPA2/C	≥ 40	≥ 40	Duripanel A2	19	1350,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	36,7	REI30	●

¹⁾ The floor was protected from the bottom side with the Nida Ogień Plus board of min. thickness 12.5 mm.

²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.

³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163NZIP.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D	
		G18/DPB1/C	G19/DPA2/C
		Consumption of material per 1m ²	
Duripanel B1 board 16 mm	m ²	1,0	-
Duripanel A2 board 19 mm	m ²	-	1,0
Cementex board 8 mm	m ²	1,0	1,0
Duripanel board screws	m ²	10 ⁴⁾	10 ⁴⁾
Fixing elements - galvanised steel staples or screws for particle boards	pcs.	20	20
Sealing tape for Nida acoustic insulation	lm	1,7	1,7
Insulation material	m ²	1,0 ⁵⁾	1,0 ⁵⁾

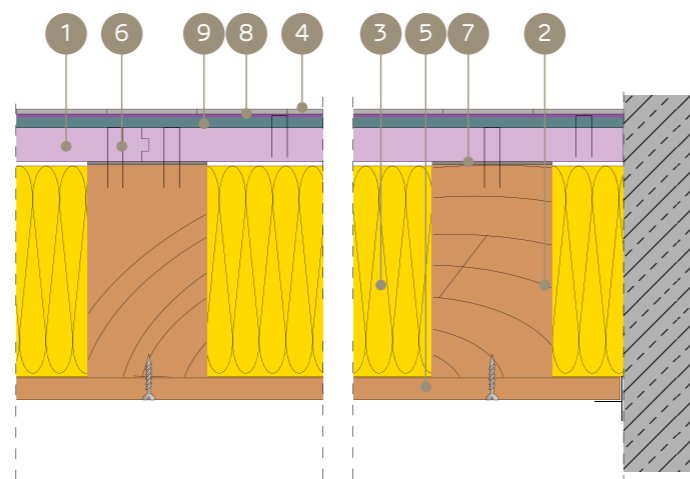
⁴⁾ Optionally, it is possible to utilise galvanised steel staples.

⁵⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.

MATERIALS:

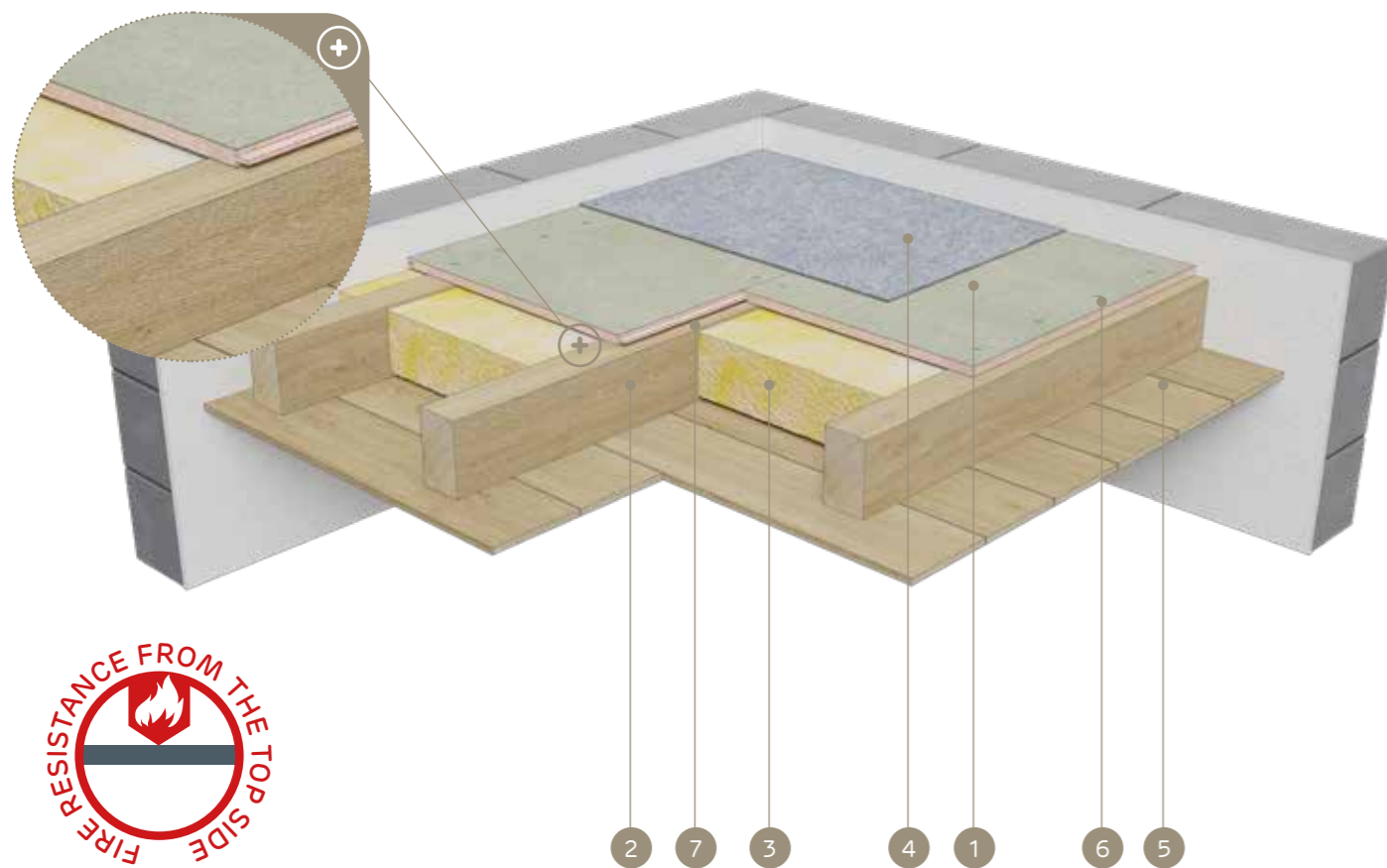
1. Duripanel cement-particle board
2. Timber floor beams
3. Insulation material mineral wool
4. Floor finish (ceramic tiles, or parquet)
5. Ceiling finish (timber boards, or Nida plasterboard)
6. Duripanel board screws, or steel staples
7. Sealing tape for Nida acoustic insulation
8. Cement adhesive for ceramic cladding
9. Cementex cement board



nida Strop D

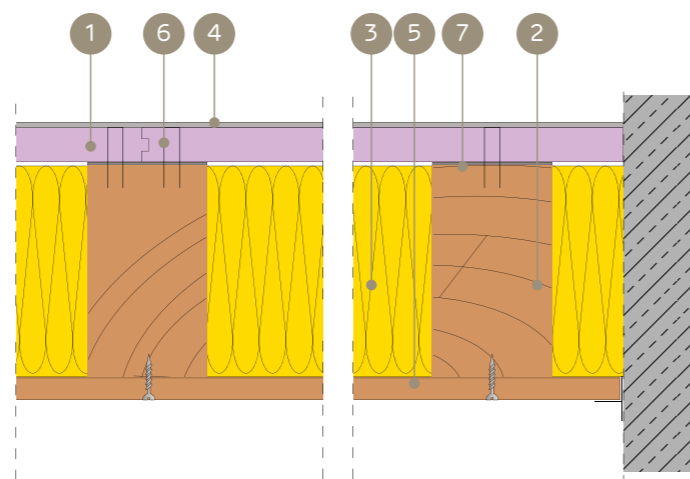
Fire resistance class:
REI60Coefficient of effort α_{ul} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
22,5-51,4 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163NZP

SYSTEMS:

G22/DPB1; G18/DPB1; G22/DPA2; G19/DPA2;
G40/DPB1; G24/DPB1; G38/DPA2

MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (carpet, or floating floor)
- Ceiling finish (timber boards, or Nida plasterboard)
- Duripanel board screws, or steel staples
- Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE TOP SIDE (SURFACE FINISH - CARPET, FLOATING FLOOR)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m²]	Fire resistance class [min]	Special system
	width - b	height - h	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus			
	[mm]	[mm]		[mm]	[kg/m³]							
G22/DPB1	80 ÷ 99	80 ÷ 99	Duripanel B1	22	1250,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0	27,5	REI60	●
G18/DPB1	80 ÷ 99	80 ÷ 99	Duripanel B1	18 ¹⁾	1250,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0	22,5	REI60	●
G22/DPA2	80 ÷ 99	80 ÷ 99	Duripanel A2	22	1350,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0	29,7	REI60	●
G19/DPA2	80 ÷ 99	80 ÷ 99	Duripanel A2	19 ¹⁾	1350,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0	25,7	REI60	●
G18/DPB1	≥ 100	≥ 100	Duripanel B1	18	1250,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	22,5	REI60	●
G19/DPA2	≥ 100	≥ 100	Duripanel A2	19	1350,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	25,7	REI60	●
G40/DPB1	80 ÷ 99	80 ÷ 99	Duripanel B1	2 x 20	1250,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0	50,0	REI60	●
G24/DPB1	≥ 100	≥ 100	Duripanel B1	24 ³⁾	1250,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0	30,0	REI60	●
G38/DPA2	80 ÷ 99	80 ÷ 99	Duripanel A2	2 x 19	1250,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0	51,4	REI60	●
G22/DPA2	≥ 100	≥ 100	Duripanel A2	22 ³⁾	1250,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0	29,7	REI60	●

¹⁾ The floor was protected from the bottom side with the Nida Ogień Plus board of min. thickness 12.5 mm.²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.³⁾ The floor was protected from the bottom side with the Nida Ogień Plus, or Nida Ogień Kompakt board of the overall min. thickness 25 mm.⁴⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163NZP.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D					
		G22/DPB1	G18/DPB1	G40/DPB1	G24/DPB1	G22/DPA2	G19/DPA2
		Consumption of material per 1m ²					
Duripanel B1 board 16 mm	m ²	-	1,0	-	-	-	-
Duripanel A2 board 19 mm	m ²	-	-	-	-	-	1,0
Duripanel B1 board 20 mm	m ²	-	-	2,0	-	-	-
Duripanel A2 board 22 mm	m ²	-	-	-	-	1,0	-
Duripanel B1 board 22 mm	m ²	1,0	-	-	-	-	-
Duripanel B1 board 24 mm	m ²	-	-	-	1,0	-	-
Duripanel board screws	pcs	10 ⁵⁾	10 ⁵⁾	20 ⁵⁾	10 ⁵⁾	10 ⁵⁾	10 ⁵⁾
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾

⁵⁾ Optionally, it is possible to utilise galvanised steel staples.⁶⁾ Application acc. to the requirements.

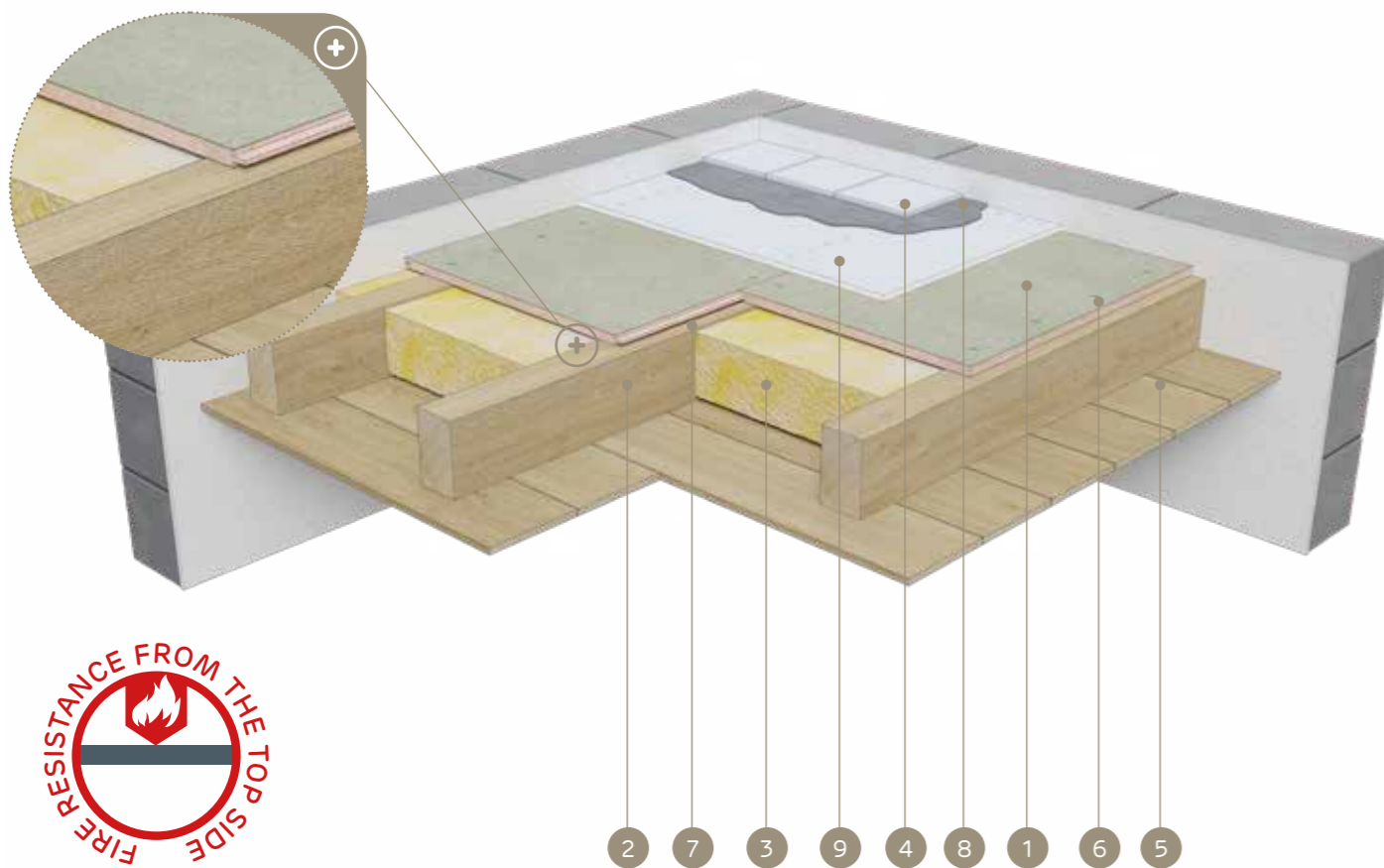
The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop DFire resistance class:
REI60Coefficient of effort $\alpha_{R,t}$:
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
33,5-38,5 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163NZP

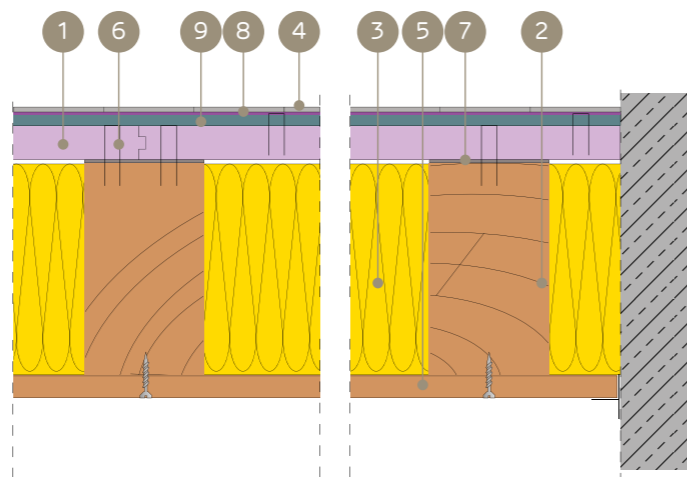
SYSTEMS:

G18/DPB1/C; G19/DPA2/C; G22/DPB1/C; G22/DPA2/C;



MATERIALS:

1. Duripanel cement-particle board
2. Timber floor beams
3. Insulation material mineral wool
4. Floor finish (ceramic tiles, or parquet)
5. Ceiling finish (timber boards, or Nida plasterboard)
6. Duripanel board screws, or steel staples
7. Sealing tape for Nida acoustic insulation
8. Cement adhesive for ceramic cladding
9. Cementex cement board



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE TOP SIDE (SURFACE FINISH - CERAMIC TILES, PARQUET)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the top side - Cement-particle board			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m ²]	Fire resistance class [min]	Special system
	width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus			
	[mm]	[mm]		[mm]	[kg/m ³]		[mm]	[kg/m ³]							
G18/DPB1/C	≥ 50	≥ 50	Duripanel B1	18	1250,0	Cementex	8	1387,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	33,5	REI60	●
G19/DPA2/C	≥ 50	≥ 50	Duripanel A2	19	1350,0	Cementex	8	1387,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	36,7	REI60	●
G22/DPB1/C	≥ 60	≥ 60	Duripanel B1	22	1250,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	38,5	REI60	●
G18/DPB1/C	≥ 100	≥ 100	Duripanel B1	18 ¹⁾	1250,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	33,5	REI60	●
G22/DPA2/C	≥ 60	≥ 60	Duripanel A2	22	1350,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	36,7	REI60	●
G19/DPA2/C	≥ 60	≥ 60	Duripanel A2	19 ¹⁾	1350,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	36,7	REI60	●

¹⁾ The floor was protected from the bottom side with the Nida Ogień Plus board of min. thickness 12.5 mm.²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163NZP.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D			
		G18/DPB1/C	G19/DPA2/C	G22/DPB1/C	G22/DPB1/C
		Consumption of material per 1m ²			
Duripanel B1 board 16 mm	m ²	1,0	-	-	-
Duripanel A2 board 19 mm	m ²	-	1,0	-	-
Duripanel B1 board 22 mm	m ²	-	-	1,0	-
Duripanel A2 board 22 mm	m ²	-	-	-	1,0
Cementex board 8 mm	m ²	1,0	1,0	1,0	1,0
Duripanel board screws	m ²	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾
Fixing elements - galvanised steel staples or screws for particle boards	pcs.	20	20	20	20
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾

⁴⁾ Optionally, it is possible to utilise galvanised steel staples.⁵⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop D



Fire resistance class:
REI90



Coefficient of effort α_{ul} :
1,0-0,6



Cross-section modulus b/h:
1,0-0,25



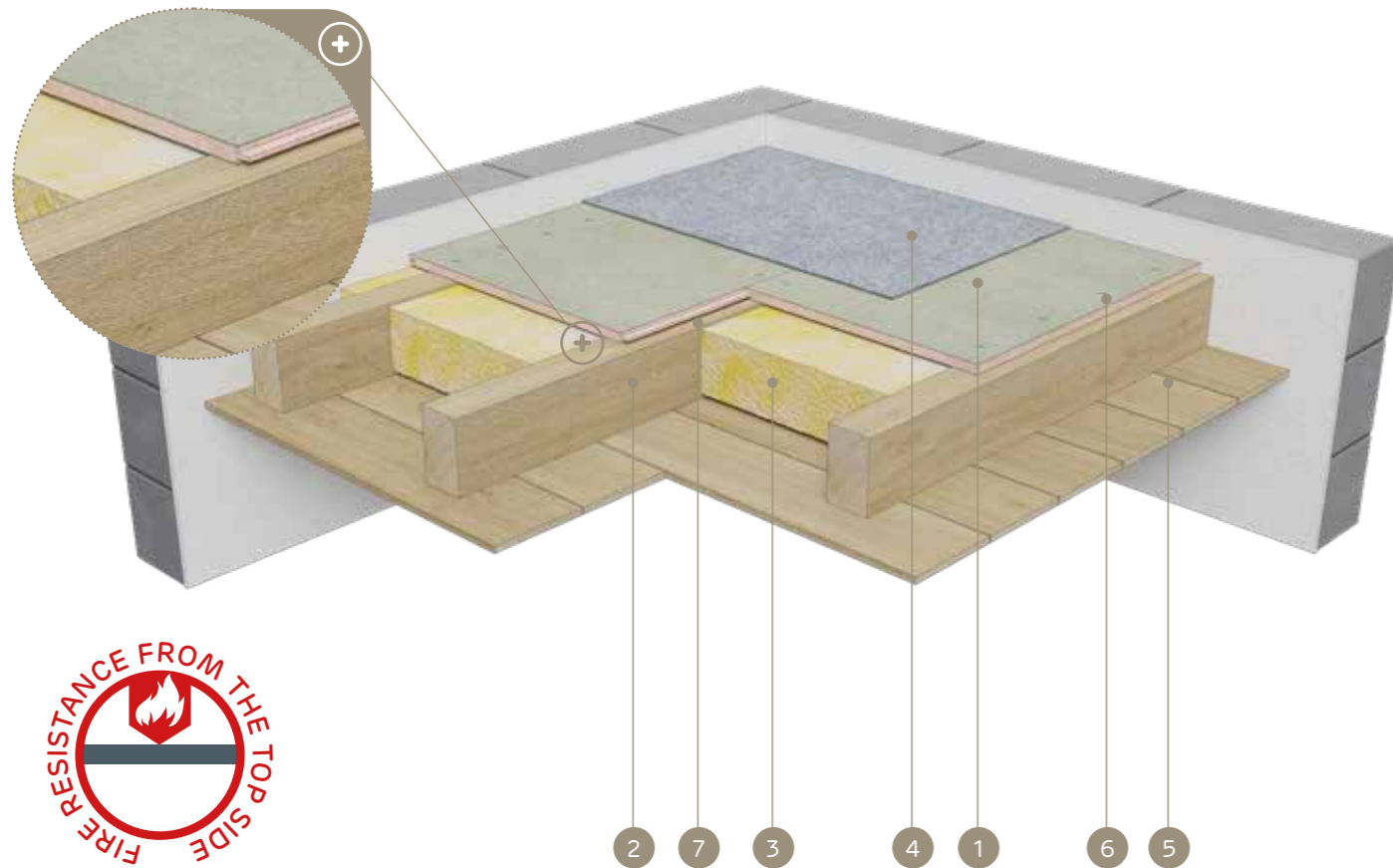
Weight of 1m² of encasement:
22,5-80,0 kg



Number of related document:
Fire classification of ITB

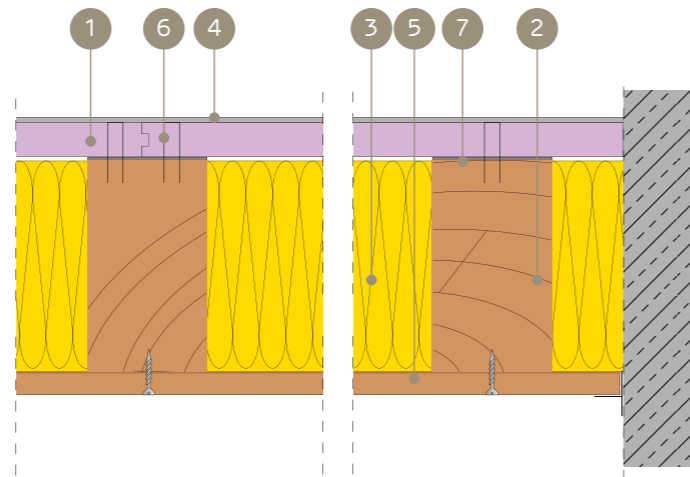
Fire classification of ITB:
ITB 01060/21/R163N2P

SYSTEMS:
**G18/DPB1; G32/DPB1; G36/DPB1; G64/DPB1; G19/DPA2;
G25/DPA2; G32/DPA2; G56/DPA2**



MATERIALS:

1. Duripanel cement-particle board
2. Timber floor beams
3. Insulation material mineral wool
4. Floor finish (carpet, or floating floor)
5. Ceiling finish (timber boards, or Nida plasterboard)
6. Duripanel board screws, or steel staples
7. Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE TOP SIDE (SURFACE FINISH - CARPET, FLOATING FLOOR)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m²]	Fire resistance class [min]	Special system
	width - b	height - h	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort [α_{ul}]	Cross-section modulus b/h			
	[mm]	[mm]		[mm]	[kg/m³]	[mm]	[kg/m³]					
G36/DPB1	80 ÷ 99	80 ÷ 99	Duripanel B1	36	1250,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0	45,0	REI90	●
G32/DPB1	80 ÷ 99	80 ÷ 99	Duripanel B1	32 ¹⁾	1250,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0	40,0	REI90	●
G32/DPA2	≥ 100	≥ 100	Duripanel A2	32	1350,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0	43,2	REI90	●
G25/DPA2	≥ 100	≥ 100	Duripanel A2	25 ¹⁾	1350,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0	33,8	REI90	●
G18/DPB1	≥ 100	≥ 200	Duripanel B1	18	1350,0	equal to h - of beam	50,0	1,0 ÷ 0,6	0,5 ÷ 0,25	22,5	REI90	●
G19/DPA2	≥ 100	≥ 200	Duripanel A2	19	1350,0	equal to h - of beam	50,0	1,0 ÷ 0,6	0,5 ÷ 0,25	25,7	REI90	●
G64/DPB1	≥ 100	≥ 100	Duripanel B1	40 + 24	1250,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,8	1,0 ÷ 0,5	80,0	REI90	●
G36/DPB1	≥ 100	≥ 100	Duripanel B1	36 ³⁾	1250,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,8	1,0 ÷ 0,5	45,0	REI90	●
G56/DPA2	≥ 100	≥ 100	Duripanel A2	2 x 28	1250,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0	75,6	REI90	●
G32/DPA2	≥ 100	≥ 100	Duripanel A2	32 ³⁾	1250,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0	43,2	REI90	●

- ¹⁾ The floor was protected from the bottom side with the Nida Ogień Plus board of min. thickness 12.5 mm.
 - ²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.
 - ³⁾ The floor was protected from the bottom side with the Nida Ogień Plus, or Nida Ogień Kompakt board of the overall min. thickness 25 mm.
 - ⁴⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).
- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
 - Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
 - The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
 - The detailed guidelines are presented in the ITB work no. 01060/21/R163N2P.
 - The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D							
		G18/DPB1	G32/DPB1	G36/DPB1	G64/DPB1	G19/DPA2	G25/DPA2	G32/DPA2	G56/DPA2
		Consumption of material per 1m²							
Duripanel B1 board 16 mm	m²	1,0	-	-	-	-	-	-	-
Duripanel A2 board 19 mm	m²	-	-	-	-	1,0	-	-	-
Duripanel B1 board 24 mm	m²	-	-	-	1,0	-	-	-	-
Duripanel A2 board 25 mm	m²	-	-	-	-	-	1,0	-	-
Duripanel B1 board 32 mm	m²	-	1,0	-	-	-	-	-	-
Duripanel A2 board 28 mm	m²	-	-	-	-	-	-	-	2,0
Duripanel A2 board 32 mm	m²	-	-	-	-	-	-	1,0	-
Duripanel B1 board 36 mm	m²	-	-	1,0	-	-	-	-	-
Duripanel B1 board 40 mm	m²	-	-	-	1,0	-	-	-	-
Duripanel board screws	pcs.	10 ⁵⁾	10 ⁵⁾	10 ⁵⁾	20 ⁵⁾	10 ⁵⁾	10 ⁵⁾	10 ⁵⁾	20 ⁵⁾
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m²	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾

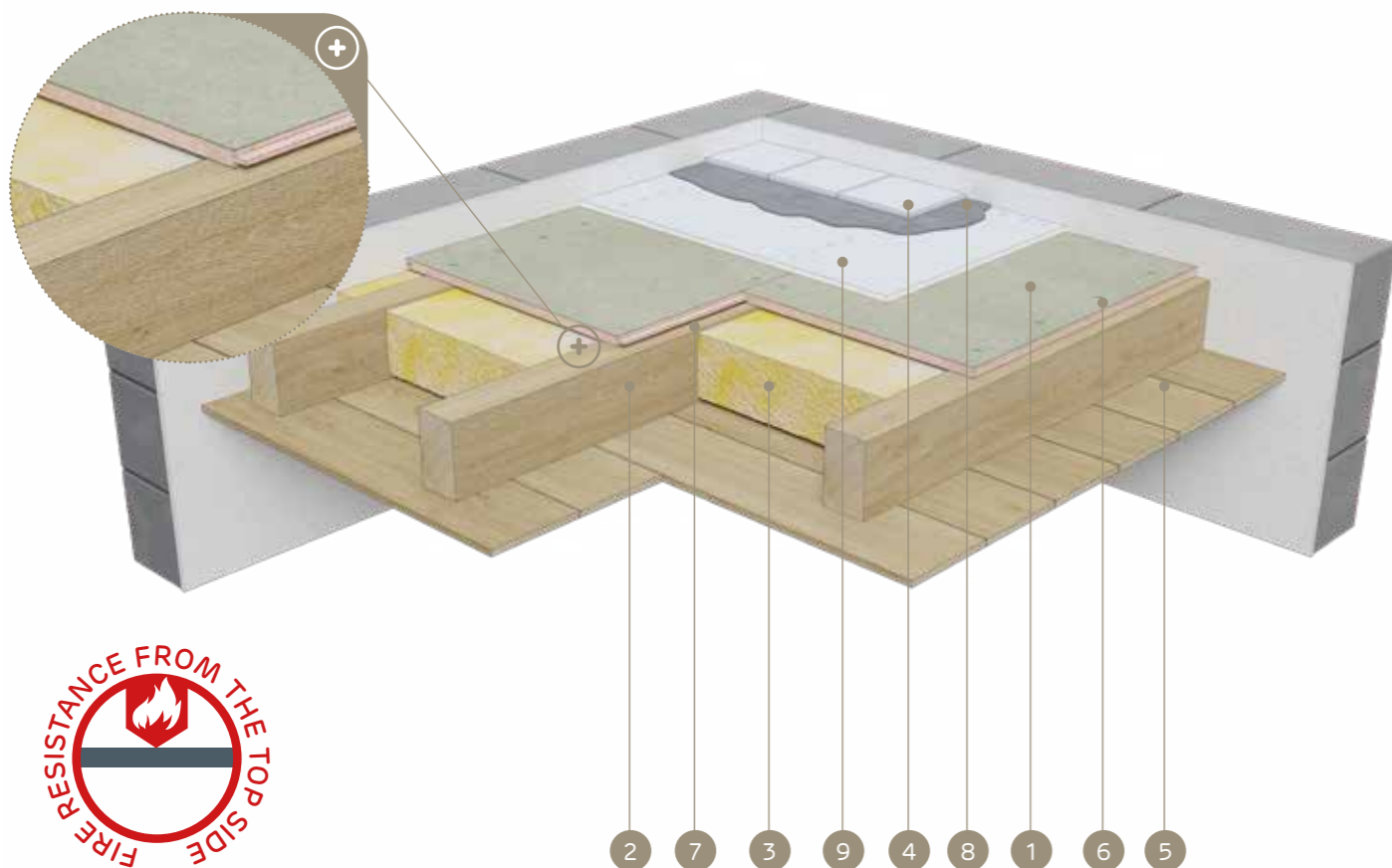
- ⁵⁾ Optionally, it is possible to utilise galvanised steel staples.
 - ⁶⁾ Application acc. to the requirements.
- The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop D

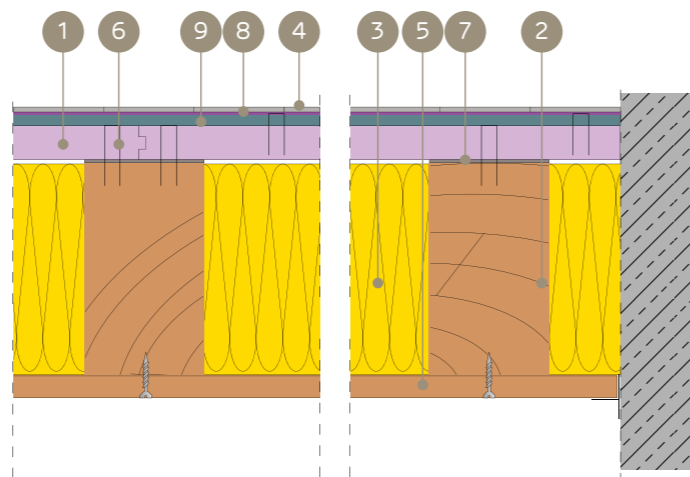
Fire resistance class:
REI90Coefficient of effort $\alpha_{R,i}$:
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
36,0-62,3 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163N2P

SYSTEMS:

G24/DPB1/C; G22/DPA2/C; G20/DPB1/C; G19/DPA2/C;
G40/DPB1/C; G32/DPB1/C; G36/DPA2/C; G28/DPA2/C

MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (ceramic tiles, or parquet)
- Ceiling finish (timber boards, or Nida plasterboard)
- Duripanel board screws, or steel staples
- Sealing tape for Nida acoustic insulation
- Cement adhesive for ceramic cladding
- Cementex cement board



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE TOP SIDE (SURFACE FINISH - CERAMIC TILES, PARQUET)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the top side - Cement-particle board			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m ²]	Fire resistance class [min]	Special system
	width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus			
	[mm]	[mm]		[mm]	[kg/m ³]		[mm]	[kg/m ³]							
G24/DPB1/C	80 ÷ 99	80 ÷ 99	Duripanel B1	24	1250,0	Cementex	8	1387,0	equal to h - of beam	50,0	1,0	1,0	41,0	REI90	●
G22/DPA2/C	80 ÷ 99	80 ÷ 99	Duripanel A2	22	1350,0	Cementex	8	1387,0	equal to h - of beam	50,0	1,0	1,0	40,7	REI90	●
G20/DPB1/C	≥ 100	≥ 100	Duripanel B1	20	1250,0	Cementex	8	1387,0	equal to h - of beam	50,0	1,0	1,0	36,0	REI90	●
G19/DPA2/C	≥ 100	≥ 100	Duripanel A2	19	1350,0	Cementex	8	1387,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0	36,7	REI90	●
G40/DPB1/C	≥ 40	≥ 40	Duripanel B1	40	1250,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	61,0	REI90	●
G32/DPB1/C	≥ 100	≥ 100	Duripanel B1	32 ¹⁾	1250,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,5	51,0	REI90	●
G36/DPA2/C	≥ 40	≥ 40	Duripanel A2	22 + 16	1350,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	62,3	REI90	●
G28/DPA2/C	≥ 100	≥ 100	Duripanel A2	28 ¹⁾	1350,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,5	48,8	REI90	●

¹⁾ The floor was protected from the bottom side with the Nida Ogień Plus board of min. thickness 12.5 mm.²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163N2P.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D								
		G20/DPB1/C	G24/DPA2/C	G32/DPB1/C	G40/DPB1/C	G19/DPA2/C	G22/DPA2/C	G28/DPA2/C	G36/DPA2/C	
		Consumption of material per 1m ²								
Duripanel B1 board 20 mm	m ²	1,0	-	-	-	-	-	-	-	
Duripanel A2 board 16 mm	m ²	-	-	-	-	-	-	-	1,0	
Duripanel B1 board 24 mm	m ²	-	1,0	-	-	-	-	-	-	
Duripanel A2 board 19 mm	m ²	-	-	-	-	1,0	-	-	-	
Duripanel B1 board 32 mm	m ²	-	-	1,0	-	-	-	-	-	
Duripanel A2 board 22 mm	m ²	-	-	-	-	-	1,0	-	1,0	
Duripanel B1 board 40 mm	m ²	-	-	-	1,0	-	-	-	-	
Duripanel A2 board 28 mm	m ²	-	-	-	-	-	-	1,0	-	
Cementex board 8 mm	m ²	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	
Duripanel board screws	pcs.	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	20 ⁴⁾	
Fixing elements - galvanised steel staples or screws for particle boards	pcs.	20	20	20	20	20	20	20	20 ⁴⁾	
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	
Insulation material	m ²	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	

⁴⁾ Optionally, it is possible to utilise galvanised steel staples.⁵⁾ Application acc. to the requirements.

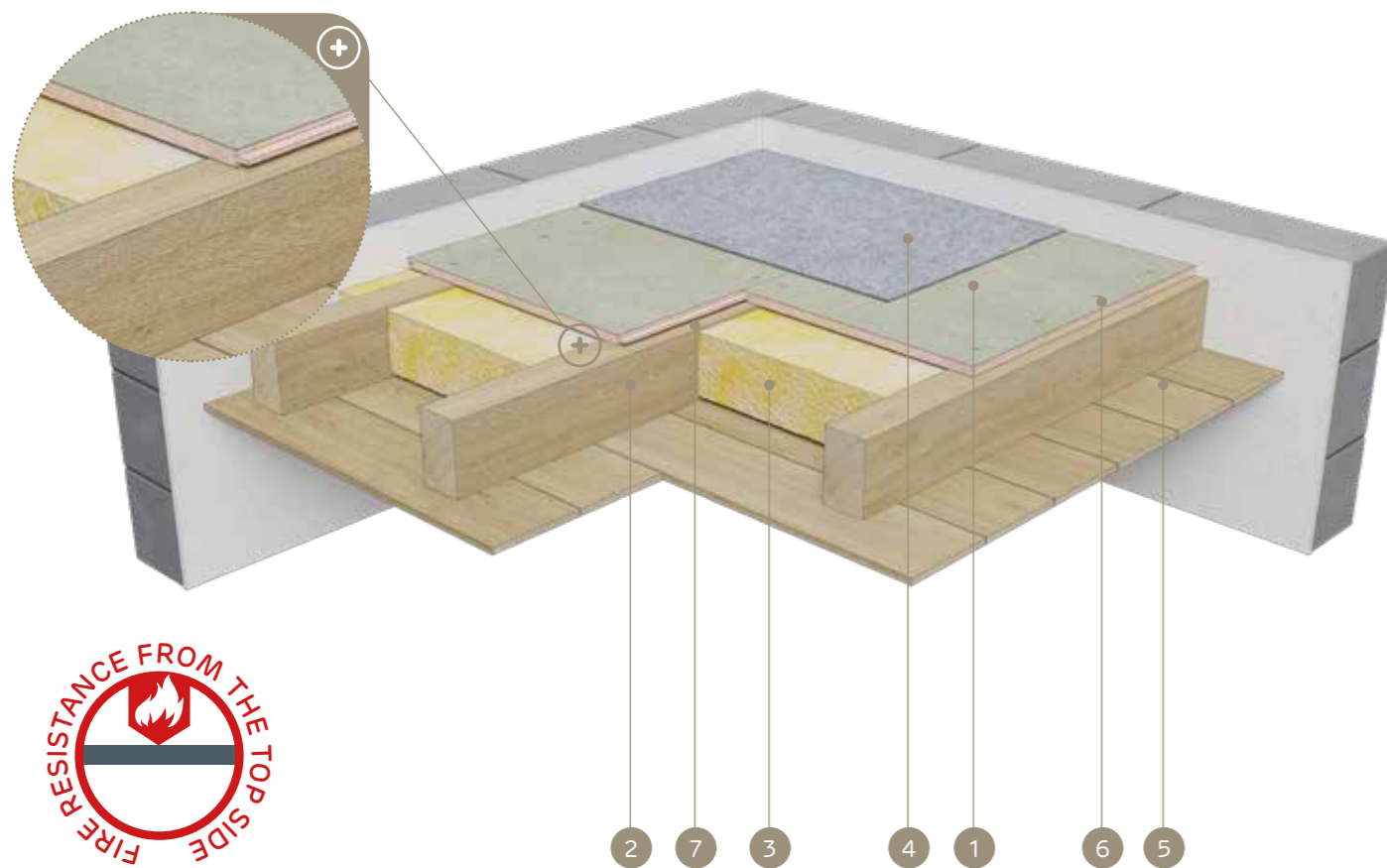
The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop D

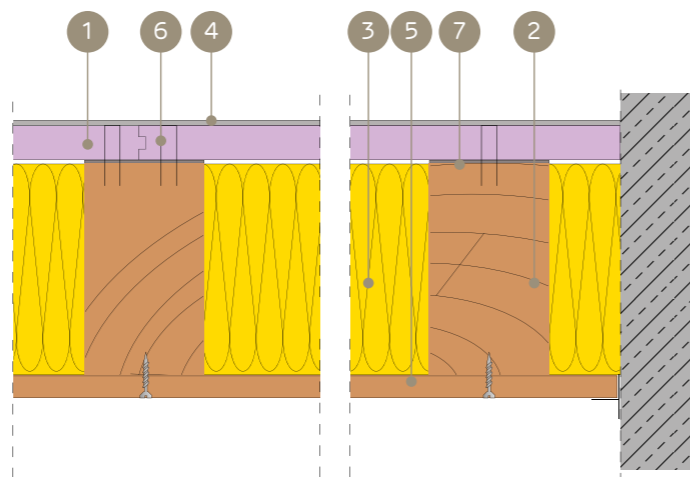
Fire resistance class:
REI120Coefficient of effort α_{M} :
1,0-0,6Cross-section modulus b/h:
1,0-0,5Weight of 1m² of encasement:
43,2-100,0 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163NZP

SYSTEMS:

G36/DPB1; G40/DPB1; G56/DPB1; G64/DPB1; G80/DPB1;
G32/DPA2; G38/DPA2; G44/DPA2; G48/DPA2

MATERIALS:

1. Duripanel cement-particle board
2. Timber floor beams
3. Insulation material mineral wool
4. Floor finish (carpet, or floating floor)
5. Ceiling finish (timber boards, or Nida plasterboard)
6. Duripanel board screws, or steel staples
7. Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE TOP SIDE (SURFACE FINISH - CARPET, FLOATING FLOOR)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m²]	Fire resistance class [min]	Special system
	width - b	height - h	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort $[\alpha_M]$	Cross-section modulus b/h			
	[mm]	[mm]		[mm]	[kg/m³]	[mm]	[kg/m³]					
G56/DPB1	≥ 100	≥ 100	Duripanel B1	40 + 16	1250,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0	70,0	REI120	●
G40/DPB1	≥ 100	≥ 100	Duripanel B1	40 ¹⁾	1250,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0	50,0	REI120	●
G44/DPA2	≥ 100	≥ 100	Duripanel A2	2 x 22	1350,0	equal to h - of beam	50,0	1,0	1,0	59,4	REI120	●
G38/DPA2	≥ 100	≥ 100	Duripanel A2	16 + 22 ¹⁾	1350,0	equal to h - of beam	50,0	1,0	1,0	51,3	REI120	●
G36/DPB1	≥ 60	≥ 120	Duripanel B1	36 ¹⁾	1350,0	equal to h - of beam	50,0	1,0 ÷ 0,6	0,5	45,0	REI120	●
G32/DPA2	≥ 60	≥ 120	Duripanel A2	32 ¹⁾	1350,0	equal to h - of beam	50,0	1,0 ÷ 0,6	0,5	43,2	REI120	●
G80/DPB1	≥ 100	≥ 100	Duripanel B1	2 x 40	1250,0	- ⁵⁾	- ⁵⁾	1,0 ÷ 0,6	1,0	100,0	REI120	●
G64/DPB1	≥ 100	≥ 100	Duripanel B1	40 + 24 ³⁾	1250,0	- ⁵⁾	- ⁵⁾	1,0 ÷ 0,8	1,0 ÷ 0,5	80,0	REI120	●
G48/DPA2	≥ 100	≥ 100	Duripanel A2	32 + 16 ⁴⁾	1250,0	- ⁵⁾	- ⁵⁾	1,0 ÷ 0,6	1,0	64,0	REI120	●

¹⁾ The floor was protected from the bottom side with the Nida Ogień Plus board of min. thickness 12.5 mm.²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.³⁾ The floor was protected from the bottom side with the Nida Ogień Plus, or Nida Ogień Kompakt board of the overall min. thickness 25 mm.⁴⁾ The floor was protected from the bottom side with the Nida Ogień Plus, or Nida Ogień Kompakt board of the overall min. thickness 37.5 mm.⁵⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163NZP.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D									
		G36/DPB1	G40/DPB1	G56/DPB1	G64/DPB1	G80/DPB1	G32/DPA2	G38/DPA2	G44/DPA2	G48/DPA2	
		Consumption of material per 1m ²									
Duripanel B1 board 16 mm	m ²	-	-	1,0	-	-	-	-	-	-	
Duripanel A2 board 16 mm	m ²	-	-	-	-	-	1,0	-	-	1,0	
Duripanel B1 board 24 mm	m ²	-	-	-	1,0	-	-	-	-	-	
Duripanel A2 board 22 mm	m ²	-	-	-	-	-	-	1,0	2,0	-	
Duripanel B1 board 36 mm	m ²	1,0	-	-	-	-	-	-	-	-	
Duripanel A2 board 32 mm	m ²	-	-	-	-	-	1,0	-	-	1,0	
Duripanel B1 board 40 mm	m ²	-	1,0	1,0	1,0	2,0	-	-	-	-	
Duripanel board screws	pcs.	10 ⁶⁾	10 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	10 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	
Insulation material	m ²	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	

⁶⁾ Optionally, it is possible to utilise galvanised steel staples.⁷⁾ Application acc. to the requirements.

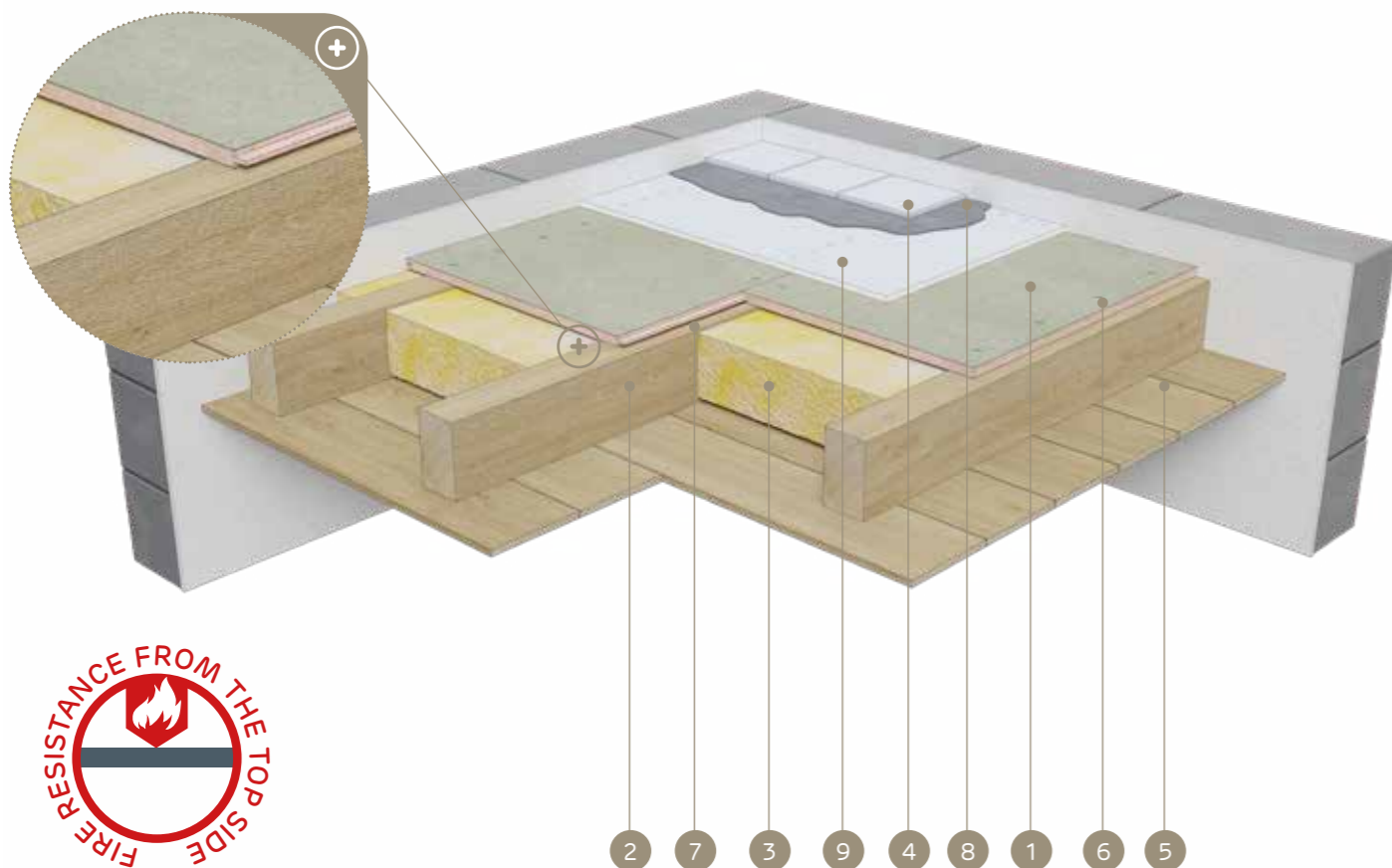
The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop D

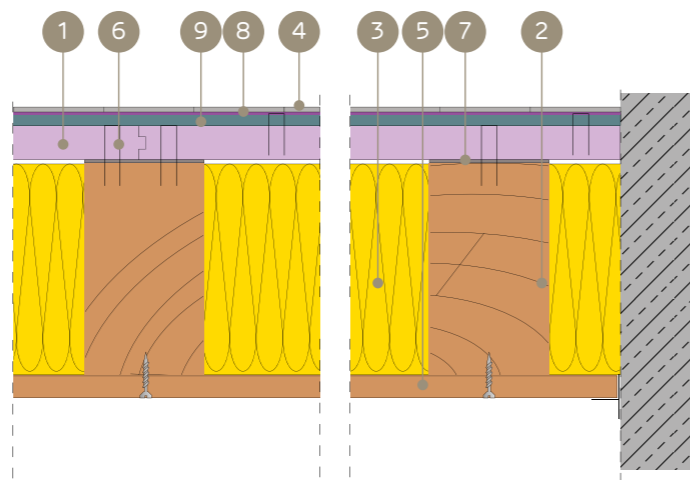
Fire resistance class:
REI120Coefficient of effort $\alpha_{R,i}$:
1,0-0,6Cross-section modulus b/h:
1,0Weight of 1m² of encasement:
50,0-80,0 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163NZP

SYSTEMS:

G40/DPB1/C; G44/DPB1/C; G64/DPB1/C;
G38/DPA2/C; G40/DPA2/C; G56/DPA2/C

MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (ceramic tiles, or parquet)
- Ceiling finish (timber boards, or Nida plasterboard)
- Duripanel board screws, or steel staples
- Sealing tape for Nida acoustic insulation
- Cement adhesive for ceramic cladding
- Cementex cement board



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE TOP SIDE (SURFACE FINISH - CERAMIC TILES, PARQUET)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the top side - Cement-particle board			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m²]	Fire resistance class [min]	Special system
	width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus			
	[mm]	[mm]		[mm]	[kg/m³]		[mm]	[kg/m³]							
G44/DPB1/C	50 ÷ 79	50 ÷ 79	Duripanel B1	2 x 22	1250,0	Cementex	8	1387,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0	66,0	REI120	●
G40/DPA2/C	60 ÷ 79	60 ÷ 79	Duripanel A2	22 + 19 ¹⁾	1350,0	Cementex	8	1387,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0	55,4	REI120	●
G40/DPB1/C	60 ÷ 79	60 ÷ 79	Duripanel B1	40	1250,0	Cementex	8	1387,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0	50,0	REI120	●
G38/DPA2/C	60 ÷ 79	60 ÷ 79	Duripanel A2	28 + 10 ¹⁾	1350,0	Cementex	8	1387,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0	51,3	REI120	●
G64/DPB1/C	≥ 100	≥ 100	Duripanel B1	40 + 24	1250,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0	80,0	REI120	●
G44/DPB1/C	≥ 100	≥ 100	Duripanel B1	2 x 22 ¹⁾	1250,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0	1,0	55,0	REI120	●
G56/DPA2/C	≥ 100	≥ 100	Duripanel A2	2 x 28	1350,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0	75,6	REI120	●
G40/DPA2/C	≥ 100	≥ 100	Duripanel A2	22 + 19 ¹⁾	1350,0	Cementex	8	1387,0	- ³⁾	- ³⁾	1,0	1,0	55,4	REI120	●

¹⁾ The floor was protected from the bottom side with the Nida Ogień Plus board of min. thickness 12.5 mm.²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163NZP.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D					
		G40/DPB1/C	G44/DPB1/C	G64/DPB1/C	G38/DPA2/C	G40/DPA2/C	G56/DPA2/C
		Consumption of material per 1m ²					
Duripanel B1 board 22 mm	m ²	-	2,0	-	-	-	-
Duripanel A2 board 10 mm	m ²	-	-	-	1,0	-	-
Duripanel B1 board 24 mm	m ²	-	-	1,0	-	-	-
Duripanel A2 board 19 mm	m ²	-	-	-	-	1,0	-
Duripanel B1 board 40 mm	m ²	1,0	-	1,0	-	-	-
Duripanel A2 board 22 mm	m ²	-	-	-	-	1,0	-
Duripanel A2 board 28 mm	m ²	-	-	-	1,0	-	2,0
Cementex board 8 mm	m ²	1,0	1,0	1,0	1,0	1,0	1,0
Duripanel board screws	pcs.	10 ⁴⁾	20 ⁴⁾	20 ⁴⁾	20 ⁴⁾	20 ⁴⁾	20 ⁴⁾
Fixing elements - galvanised steel staples or screws for particle boards	pcs.	20	20	20	20	20	20
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾

⁴⁾ Optionally, it is possible to utilise galvanised steel staples.⁵⁾ Application acc. to the requirements.

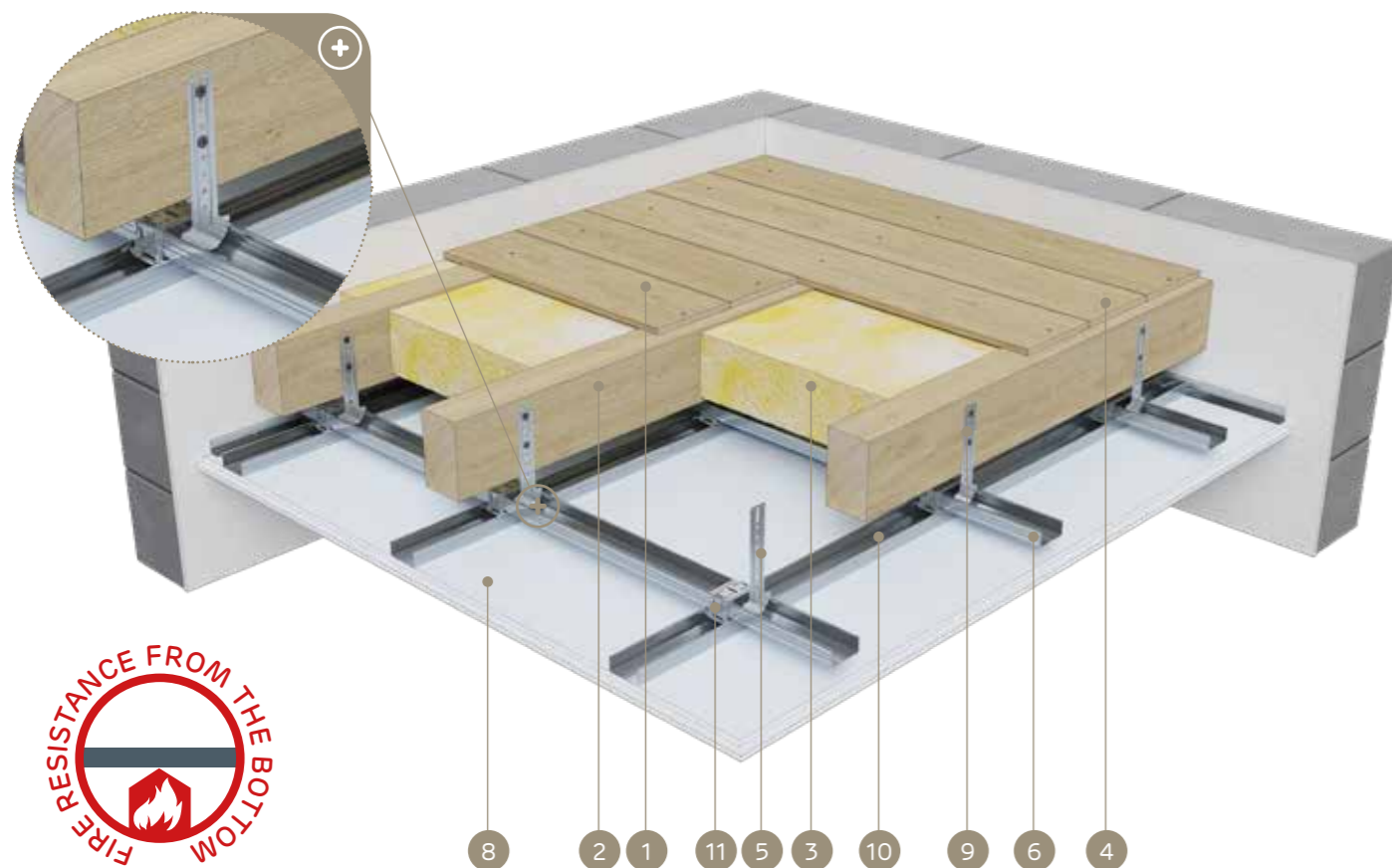
The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop D

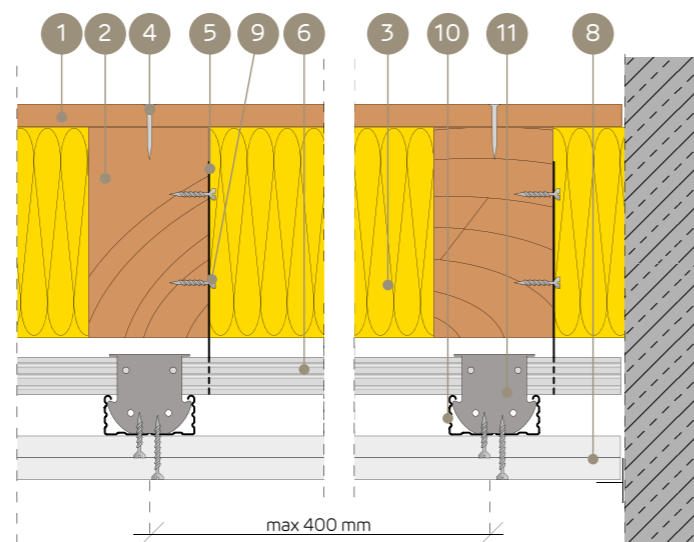
Fire resistance class:
REI30Coefficient of effort α_{M} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
10,0-20,0 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163NZIP

SYSTEMS:

D12,5/OGIEŃ+; D15/OGIEŃ+; D18/OGIEŃ+; D25/OGIEŃ+;
D25/KOMPAKT

MATERIALS:

1. Floor finish: wood boards or wood imitation boards
2. Timber floor beams
3. Insulation material mineral wool
4. Nail or wood screw
5. Nida WP 60 loft hanger
6. Nida CD 60 top main profile
7. Nida sheet metal screws
8. Nida Ogień Plus or Nida Ogień Kompakt plasterboard
9. Nida wood screws
10. Nida CD 60 bottom loadbearing profile
11. Nida LK 60 cross connector



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTTOM SIDE

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Type of steel sub-structure	Mass of encasement ²⁾	Fire resistance class	Special system
	width - b	height - h	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus				
	[mm]	[mm]	Nida	[mm]	[kg/m ³]	[mm]	[kg/m ³]	α_M	b/h				
D15/Ogień+	40 ÷ 49	40 ÷ 49	Ogień Plus	15	800,0	equal to h - of beam	26,0	1,0	1,0 ÷ 0,25	any	13,5	REI30	●
D12,5/Ogień+	≥ 50	≥ 50	Ogień Plus	12,5	800,0	equal to h - of beam	26,0	1,0	1,0 ÷ 0,25	any	10,0	REI30	●
D12,5/Ogień+	≥ 40	≥ 40	Ogień Plus	12,5	800,0	equal to h - of beam	26,0	0,8 ÷ 0,6	1,0 ÷ 0,25	any	10,0	REI30	●
D25/Ogień+	40 ÷ 49	40 ÷ 49	Ogień Plus	2x12,5 ³⁾	800,0	- ³⁾	- ³⁾	1,0	1,0 ÷ 0,25	any	20,0 ⁴⁾	REI30	●
D18/Ogień+	≥ 50	≥ 50	Ogień Plus	18	800,0	- ³⁾	- ³⁾	1,0	1,0 ÷ 0,25	any	14,7	REI30	●
D18/Ogień+	≥ 40	≥ 40	Ogień Plus	18	800,0	- ³⁾	- ³⁾	0,8 ÷ 0,6	1,0 ÷ 0,25	any	14,7	REI30	●

¹⁾ Optionally, a single-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm boards should be utilised.

²⁾ The weight does not include the mass of the Nida steel subconstruction, the timber floor load-bearing structure and the insulation material.

³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

⁴⁾ For the single-layer 1x25 mm Nida Ogień Kompakt arrangement, the weight of the encasement is 20.80 kg/m².

• Fixing of the Nida plasterboards in the crosswise arrangement.

• The detailed guidelines are presented in the ITB work no. 01060/21/R163NZIP.

• The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D				
		D12,5/Ogień+	D15/Ogień+	D18/Ogień+	D25/Ogień+	D25/Kompakt
		Consumption of material per 1m ²				
Nida Ogień Plus 12.5 mm plasterboard	m ²	1,0	-	-	2,0	-
Nida Ogień Plus 15 mm plasterboard	m ²	-	1,0	-	-	-
Nida Ogień Plus 18 mm plasterboard	m ²	-	-	1,0	-	-
Nida Ogień Kompakt 25 mm plasterboard	m ²	-	-	-	-	1,0
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	18,0	18,0	-	6,0	-
Nida 3.5x35 mm sheet metal screws	pcs.	-	-	18,0	18,0	18,0
Anchoring element ⁵⁾	pcs.	0,6	0,6	0,6	0,6	0,6
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,3	0,3	0,3	0,3	0,3
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1
Insulation material	m ²	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾

⁵⁾ The type of the anchoring element should be selected individually for a given wall structure type.

⁶⁾ Application acc. to the requirements.

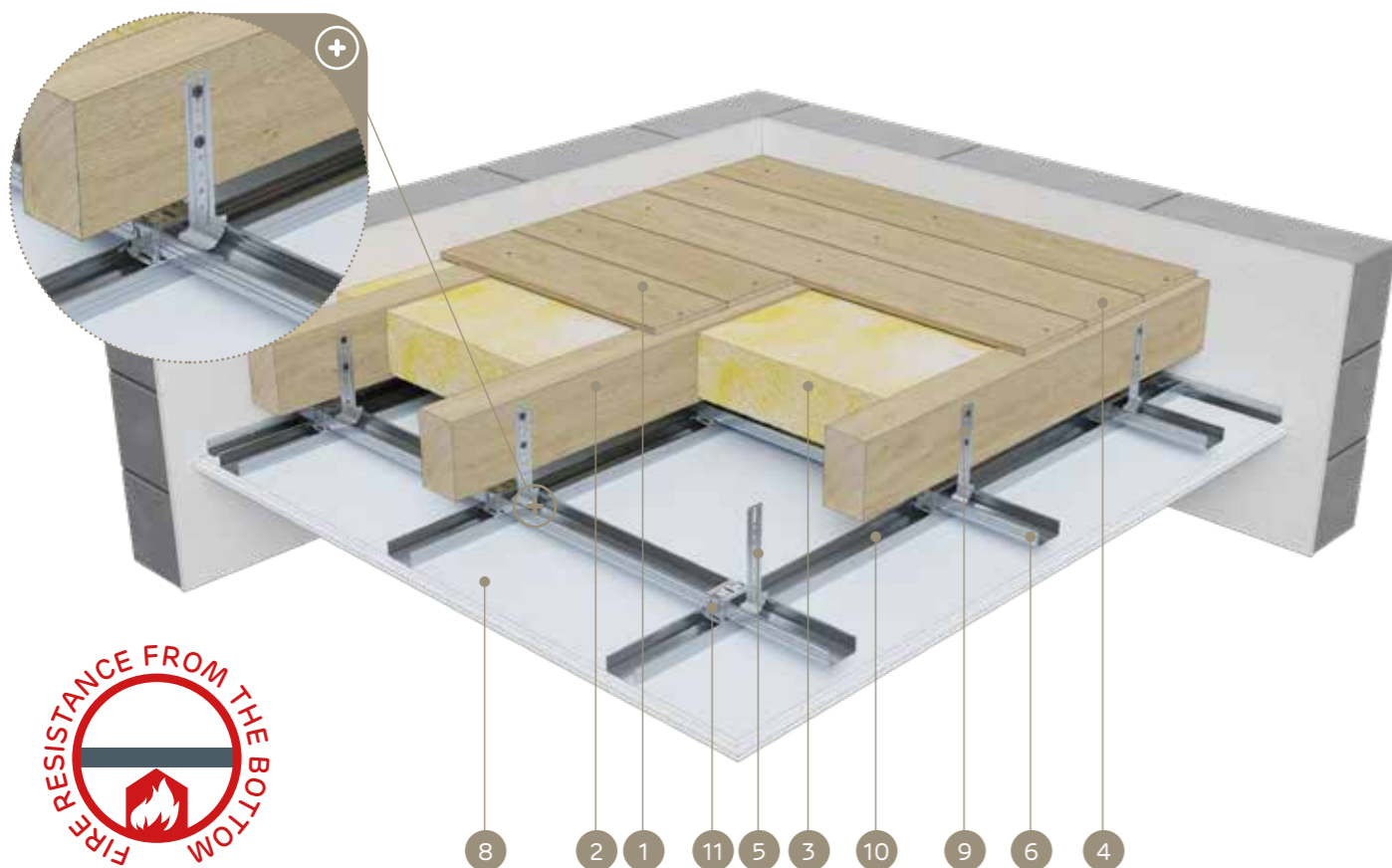
The standards concerning the amount of utilised material do not cover the loss of the material.

nida Strop D

Fire resistance class:
REI60Coefficient of effort α_{M} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
20,0-27,0 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163N3P

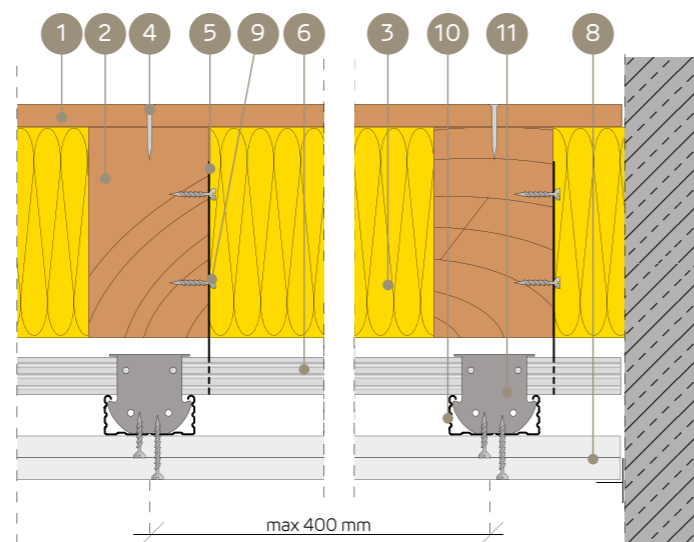
SYSTEMS:

D25/OGIEŃ+; D25/KOMPAKT; D30/OGIEŃ+



MATERIALS:

1. Floor finish: wood boards or wood imitation boards
2. Timber floor beams
3. Insulation material mineral wool
4. Nail or wood screw
5. Nida WP 60 loft hanger
6. Nida CD 60 top main profile
7. Nida sheet metal screws
8. Nida Ogień Plus or Nida Ogień Kompakt plasterboard
9. Nida wood screws
10. Nida CD 60 bottom loadbearing profile
11. Nida LK 60 cross connector



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTTOM SIDE

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Type of steel sub-structure	Mass of encasement ²⁾	Fire resistance class	Special system
	width - b	height - h	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus				
	[mm]	[mm]	Nida	[mm]	[kg/m ³]	[mm]	[kg/m ³]	α_M	b/h				
D30/Ogień+	40 ÷ 49	40 ÷ 49	Ogień Plus	2 x 15	800,0	equal to h - of beam	26,0	1,0	1,0	any	27,0	REI60	●
D25/Ogień+	≥ 50	≥ 50	Ogień Plus	2 x 12,5 ¹⁾	800,0	equal to h - of beam	26,0	1,0	1,0 ÷ 0,25	any	20,0 ⁴⁾	REI60	●
D25/Ogień+	≥ 40	≥ 40	Ogień Plus	2 x 12,5 ¹⁾	800,0	equal to h - of beam	26,0	0,8 ÷ 0,6	1,0 ÷ 0,25	any	20,0 ⁴⁾	REI60	●
D30/Ogień+	≥ 40	≥ 40	Ogień Plus	2 x 15	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	any	27,0	REI60	●

¹⁾ Optionally, a single-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm boards should be utilised.²⁾ The weight does not include the mass of the Nida steel subconstruction, the timber floor load-bearing structure and the insulation material.³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).⁴⁾ For the single-layer 1x25 mm Nida Ogień Kompakt arrangement, the weight of the encasement is 20.80 kg/m².

• Fixing of the Nida plasterboards in the crosswise arrangement.

• The detailed guidelines are presented in the ITB work no. 01060/21/R163N3P.

• The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D		
		D25/Ogień+	D25/Kompakt	D30/Ogień+
		Consumption of material per 1m ²		
Nida Ogień Plus 12.5 mm plasterboard	m ²	2,0	-	-
Nida Ogień Plus 15 mm plasterboard	m ²	-	-	2,0
Nida Ogień Kompakt 25 mm plasterboard	m ²	-	1,0	-
Nida CD60 profile	lm	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	-	6,0
Nida 3.5x35 mm sheet metal screws	pcs.	18,0	18,0	-
Nida 3.5x45 mm sheet metal screws	pcs.	-	-	18,0
Anchoring element ⁵⁾	pcs.	0,6	0,6	0,6
Nida reinforcement tape	lm	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,3	0,3	0,3
Nida Finish gypsum putty	kg	0,1	0,1	0,1
Insulation material	m ²	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾

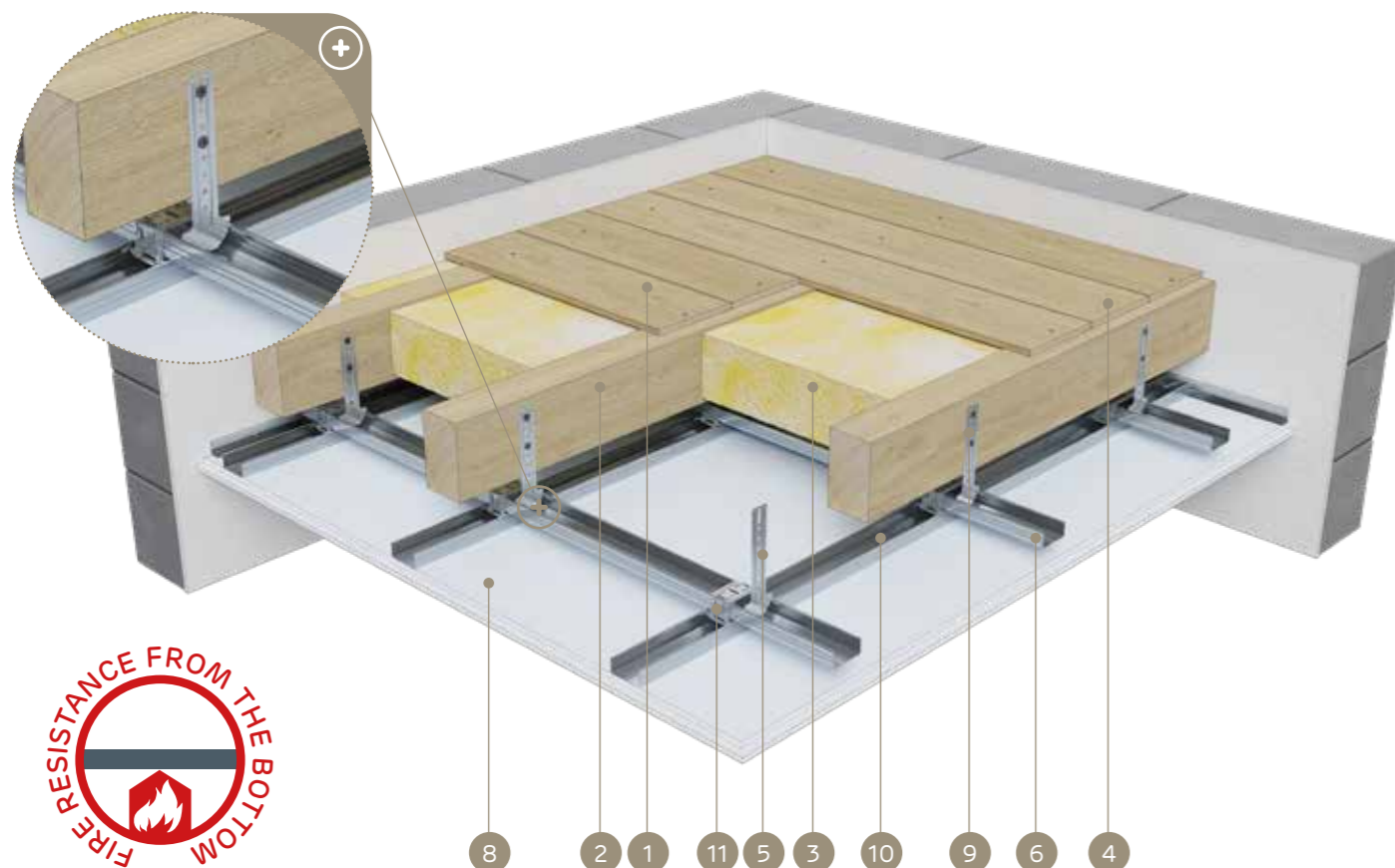
⁵⁾ The type of the anchoring element should be selected individually for a given wall structure type.⁶⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.

nida Strop D

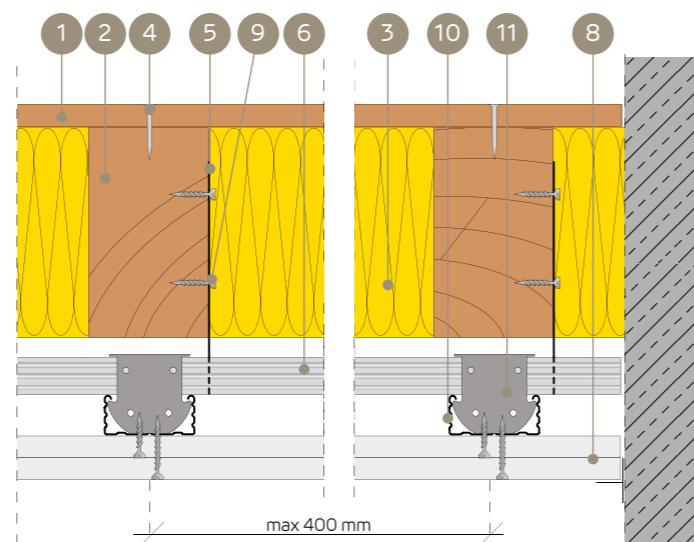
Fire resistance class:
REI90Coefficient of effort α_{M} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
27,0-40,0 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163NZZ

SYSTEMS:

D30/OGIEŃ+; D37,5/OGIEŃ+; D37,5/OGIEŃ+KOMPAKT;
D40/KOMPAKT; D50/OGIEŃ+; D50/KOMPAKT

MATERIALS:

1. Floor finish: wood boards or wood imitation boards
2. Timber floor beams
3. Insulation material mineral wool
4. Nail or wood screw
5. Nida WP 60 loft hanger
6. Nida CD 60 top main profile
7. Nida sheet metal screws
8. Nida Ogień Plus or Nida Ogień Kompakt plasterboard
9. Nida wood screws
10. Nida CD 60 bottom loadbearing profile
11. Nida LK 60 cross connector



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTTOM SIDE

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Type of steel sub-structure	Mass of encasement ³⁾	Fire resistance class	Special system
	width - b	height - h	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus				
	[mm]	[mm]	Nida	[mm]	[kg/m ³]	[mm]	[kg/m ³]	α_M	b/h				
D50/Ogień+	40 ÷ 49	40 ÷ 49	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0	any	40,0 ⁵⁾	REI90	●
D37,5/Ogień+	≥ 50	≥ 50	Ogień Plus	3 x 12,5 ⁴⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,5	any	30,0 ⁶⁾	REI90	●
D30/Ogień+	≥ 100	≥ 100	Ogień Plus	2 x 15	800,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0	any	27,0	REI90	●
D50/Ogień+	40 ÷ 79	40 ÷ 79	Ogień Plus	4 x 12,5 ¹⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	any	40,0	REI90	●
D40/Kompakt	≥ 100	≥ 100	Ogień Kompakt	2 x 20	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	any	33,4	REI90	●
D40/Kompakt	≥ 80	≥ 80	Ogień Kompakt	2 x 20	800,0	- ⁴⁾	- ⁴⁾	0,8 ÷ 0,6	1,0 ÷ 0,25	any	33,4	REI90	●

¹⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 2x25 mm boards should be utilised.

²⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm + Nida Ogień Plus type DF 1x12,5 mm boards should be utilised.

³⁾ The weight does not include the mass of the Nida steel subconstruction, the timber floor load-bearing structure and the insulation material.

⁴⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

⁵⁾ For the double-layer 2x25 mm Nida Ogień Kompakt arrangement, the weight of the encasement is 41,60 kg/m².

⁶⁾ For the double-layer 1x25 mm Nida Ogień Kompakt + 1x12,5 mm Nida Ogień Plus arrangement, the weight of the encasement is 30,80 kg/m².

• Fixing of the Nida plasterboards in the crosswise arrangement.

• The detailed guidelines are presented in the ITB work no. 01060/21/R163NZZ.

• The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D					
		D30/Ogień+	D37,5/Ogień+	D37,5/Ogień+Kompakt	D40/Kompakt	D50/Ogień+	D50/Kompakt
		Consumption of material per 1m ²					
Nida Ogień Plus 12,5 mm plasterboard	m ²	-	3,0	1,0	-	4,0	-
Nida Ogień Plus 15 mm plasterboard	m ²	2,0	-	-	-	-	-
Nida Ogień Kompakt 20 mm plasterboard	m ²	-	-	-	2,0	-	-
Nida Ogień Kompakt 25 mm plasterboard	m ²	-	-	1,0	-	-	2,0
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	6,0	6,0	-	6,0	-
Nida 3.5x35 mm sheet metal screws	pcs.	-	6,0	-	6,0	6,0	-
Nida 3.5x45 mm sheet metal screws	pcs.	18,0	-	-	-	-	6,0
Nida 3.5x55 mm sheet metal screws	pcs.	-	18,0	18,0	18,0	6,0	-
Nida 4.2x70 mm sheet metal screws	pcs.	-	-	-	-	18,0	18,0
Anchoring element ⁷⁾	pcs.	0,6	0,6	0,6	0,6	0,6	0,6
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,3	0,3	0,3	0,3	0,3	0,3
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1	0,1
Insulation material	m ²	1,0 ⁸⁾	1,0 ⁸⁾	1,0 ⁸⁾	1,0 ⁸⁾	1,0 ⁸⁾	1,0 ⁸⁾

⁷⁾ The type of the anchoring element should be selected individually for a given wall structure type.

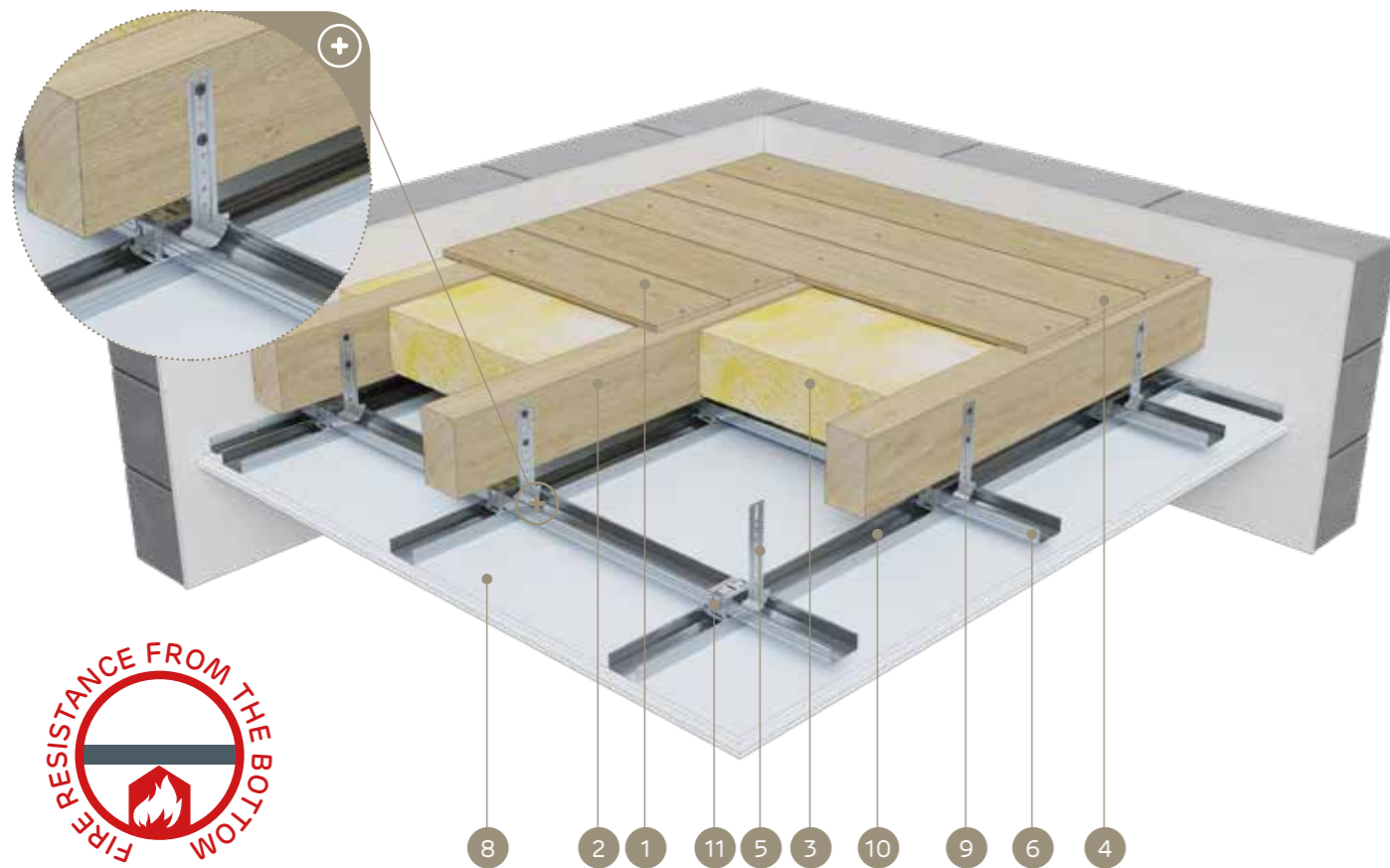
⁸⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.

nida Strop D

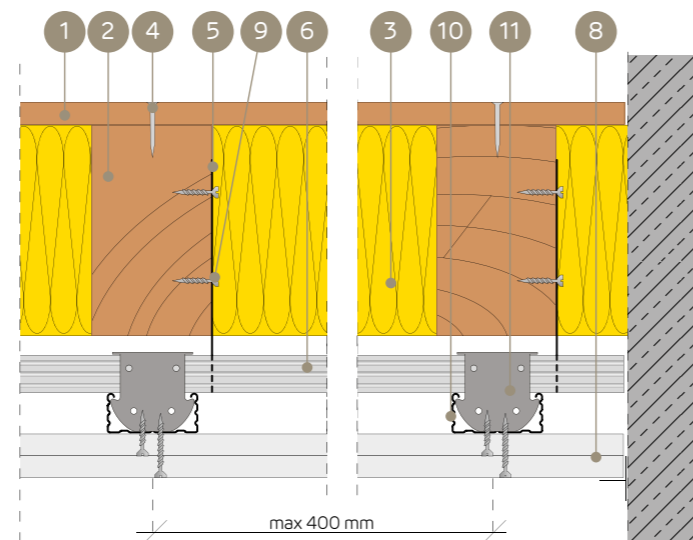
Fire resistance class:
REI120Coefficient of effort α_w :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
30,0-54,0kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163N2P

SYSTEMS:

D37,5/OGIEŃ+; D37,5/OGIEŃ+KOMPAKT; D50/OGIEŃ+;
D50/KOMPAKT; D60/OGIEŃ+; D60/KOMPAKT

MATERIALS:

1. Floor finish: wood boards or wood imitation boards
2. Timber floor beams
3. Insulation material mineral wool
4. Nail or wood screw
5. Nida WP 60 loft hanger
6. Nida CD 60 top main profile
7. Nida sheet metal screws
8. Nida Ogień Plus or Nida Ogień Kompakt plasterboard
9. Nida wood screws
10. Nida CD 60 bottom loadbearing profile
11. Nida LK 60 cross connector



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTTOM SIDE

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Type of steel sub-structure	Mass of encasement ⁴⁾	Fire resistance class	Special system
	width - b	height - h	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus				
	[mm]	[mm]	Nida	[mm]	[kg/m³]	[mm]	[kg/m³]	α_w	b/h				
D60/Ogień+	40 ÷ 49	40 ÷ 49	Ogień Plus	4 x 15 ¹⁾	800,0	equal to h - of beam	50,0	1,0	1,0	any	54,0 ⁶⁾	REI120	●
D50/Ogień+	50 ÷ 119	50 ÷ 119	Ogień Plus	4 x 12,5 ²⁾	800,0	equal to h - of beam	50,0	1,0	1,0	any	40,0 ⁷⁾	REI120	●
D37,5/Ogień+	≥ 120	≥ 120	Ogień Plus	3 x 12,5 ³⁾	800,0	equal to h - of beam	50,0	1,0	1,0 ÷ 0,5	any	30,0 ⁸⁾	REI120	●
D60/Ogień+	40 ÷ 79	40 ÷ 79	Ogień Plus	4 x 15 ¹⁾	800,0	- ⁵⁾	- ⁵⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	any	54,0 ⁶⁾	REI120	●
D50/Ogień+	≥ 100	≥ 100	Ogień Plus	4 x 12,5 ²⁾	800,0	- ⁵⁾	- ⁵⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	any	40,0 ⁷⁾	REI120	●

¹⁾ Optionally, a triple-layer arrangement of the Nida Ogień Kompakt type DF 3x20 mm boards should be utilised.²⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 2x25 mm boards should be utilised.³⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm + Nida Ogień Plus type DF 1x12,5 mm boards should be utilised.⁴⁾ The weight does not include the mass of the Nida steel subconstruction, the timber floor load-bearing structure and the insulation material.⁵⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).⁶⁾ For the triple-layer 3x20 mm Nida Ogień Kompakt arrangement, the weight of the encasement is 50.10 kg/m².⁷⁾ For the double-layer 2x25 mm Nida Ogień Kompakt arrangement, the weight of the encasement is 41.60 kg/m².⁸⁾ For the double-layer 1x25 mm Nida Ogień Kompakt + 1x12,5 mm Nida Ogień Plus arrangement, the weight of the encasement is 30.80 kg/m².

• Fixing of the Nida plasterboards in the crosswise arrangement.

• The detailed guidelines are presented in the ITB work no. 01060/21/R163N2P.

• The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D					
		D37,5/Ogień+	D37,5/Ogień+Kompakt	D50/Ogień+	D50/Kompakt	D60/Ogień+	D60/Kompakt
		Consumption of material per 1m²					
Nida Ogień Plus 12.5 mm plasterboard	m²	3,0	1,0	4,0	-	-	-
Nida Ogień Plus 15 mm plasterboard	m²	-	-	-	-	4,0	-
Nida Ogień Kompakt 20 mm plasterboard	m²	-	-	-	-	-	3,0
Nida Ogień Kompakt 25 mm plasterboard	m²	-	1,0	-	2,0	-	-
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	6,0	6,0	-	6,0	-
Nida 3.5x35 mm sheet metal screws	pcs.	6,0	-	6,0	-	-	6,0
Nida 3.5x45 mm sheet metal screws	pcs.	-	-	-	6,0	6,0	-
Nida 3.5x55 mm sheet metal screws	pcs.	18,0	18,0	6,0	-	6,0	6,0
Nida 4.2x70 mm sheet metal screws	pcs.	-	-	18,0	18,0	18,0	18,0
Anchoring element ⁹⁾	pcs.	0,6	0,6	0,6	0,6	0,6	0,6
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,3	0,3	0,3	0,3	0,3	0,3
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1	0,1
Insulation material	m²	1,0 ¹⁰⁾	1,0 ¹⁰⁾	1,0 ¹⁰⁾	1,0 ¹⁰⁾	1,0 ¹⁰⁾	1,0 ¹⁰⁾

⁹⁾ The type of the anchoring element should be selected individually for a given wall structure type.¹⁰⁾ Application acc. to the requirements.

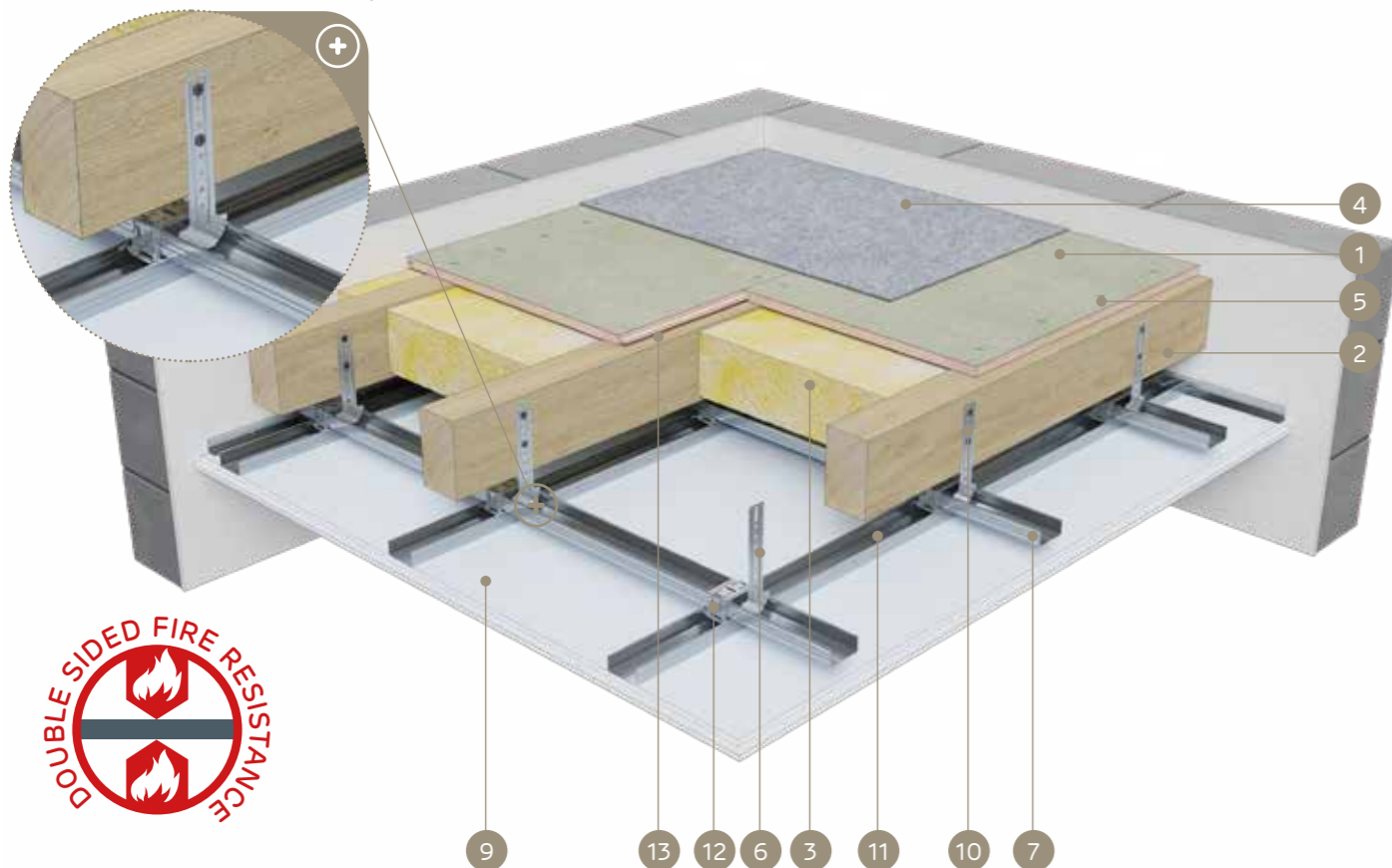
The standards concerning the amount of utilised material do not cover the loss of the material.

nida Strop D

Fire resistance class:
REI30Coefficient of effort α_{M} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
36,0-49,7 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163N2P

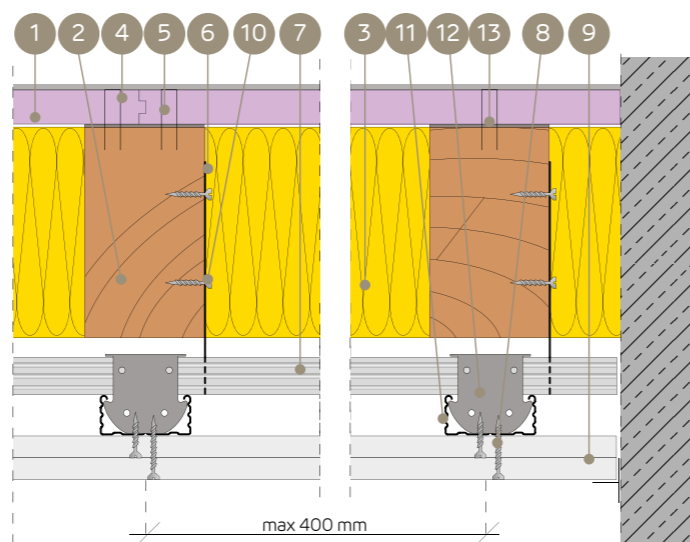
SYSTEMS:

G18/DPB1-D15/OGIEŃ+; G19/DPA2-D15/OGIEŃ+; G20/DPB1-D25/OGIEŃ+;
G20/DPB1-D25/KOMPAKT; G22/DPA2-D25/OGIEŃ+; G22/DPA2-D25/KOMPAKT;
G18/DPB1-D18/OGIEŃ+; G19/DPA2-D18/OGIEŃ+



MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (carpet, or floating floor)
- Duripanel board screws, or steel staples
- Nida WP 60 loft hanger
- Nida CD 60 top main profile
- Nida sheet metal screws
- Nida Ogień Plus or Nida Ogień Kompakt plasterboard
- Nida wood screws
- Nida CD 60 bottom loadbearing profile
- Nida LK 60 cross connector
- Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CARPET, FLOATING FLOOR)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m²]	Fire resistance class	Special system
	width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus			
	[mm]	[mm]													
G18/DPB1-D15/Ogień+	≥ 40	≥ 40	Duripanel B1	18	1250,0	Ogień Plus	15	800,0	equal to h - of beam	26,0	1,0 + 0,6	1,0 + 0,25	36,0	REI30	●
G19/DPA2-D15/Ogień+	≥ 40	≥ 40	Duripanel A2	19	1350,0	Ogień Plus	15	800,0	equal to h - of beam	26,0	1,0 + 0,6	1,0 + 0,25	39,2	REI30	●
G20/DPB1-D25/Ogień+	≥ 40	≥ 40	Duripanel B1	20	1250,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	- ³⁾	- ³⁾	1,0 + 0,6	1,0 + 0,25	45,0	REI30	●
G22/DPA2-D25/Ogień+	≥ 40	≥ 40	Duripanel A2	22	1350,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	- ³⁾	- ³⁾	1,0 + 0,6	1,0 + 0,25	49,7	REI30	●
G18/DPB1-D18/Ogień+	≥ 50	≥ 50	Duripanel B1	18	1250,0	Ogień Plus	18	800,0	- ³⁾	- ³⁾	1,0 + 0,6	1,0 + 0,25	37,2	REI30	●
G19/DPA2-D18/Ogień+	≥ 50	≥ 50	Duripanel A2	19	1350,0	Ogień Plus	18	800,0	- ³⁾	- ³⁾	1,0 + 0,6	1,0 + 0,25	40,4	REI30	●

¹⁾ Optionally, a single-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).

²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.

³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Fixing of the Nida plasterboards in the crosswise arrangement.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112N2K, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163N2P.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D							
		G18/DPB1-D15/Ogień+	G19/DPA2-D15/Ogień+	G20/DPB1-D25/Ogień+	G20/DPB1-D25/Kompakt	G22/DPA2-D25/Ogień+	G22/DPA2-D25/Kompakt	G18/DPB1-D18/Ogień+	G19/DPA2-D18/Ogień+
		Consumption of material per 1m ²							
Duripanel B1 board 16 mm	m ²	1,0	-	-	-	-	-	1,0	-
Duripanel A2 board 16 mm	m ²	-	1,0	-	-	-	-	-	1,0
Duripanel B1 board 20 mm	m ²	-	-	1,0	1,0	-	-	-	-
Duripanel A2 board 22 mm	m ²	-	-	-	-	1,0	1,0	-	-
Nida Ogień Plus 12.5 mm plasterboard	m ²	-	-	2,0	-	2,0	-	-	-
Nida Ogień Plus 15 mm plasterboard	m ²	1,0	1,0	-	-	-	-	-	-
Nida Ogień Plus 18 mm plasterboard	m ²	-	-	-	-	-	-	1,0	1,0
Nida Ogień Kompakt 25 mm plasterboard	m ²	-	-	-	1,0	-	1,0	-	-
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	18,0	18,0	6,0	6,0	6,0	-	-	-
Nida 3.5x35 mm sheet metal screws	pcs.	-	-	18,0	-	18,0	18,0	18,0	18,0
Anchoring element ⁴⁾	pcs.	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Duripanel board screws	pcs.	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,3	0,3	0,6	0,3	0,6	0,3	0,3	0,3
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾

⁴⁾ Optionally, it is possible to utilise galvanised steel staples.

⁵⁾ The type of the anchoring element should be selected individually for a given wall structure type.

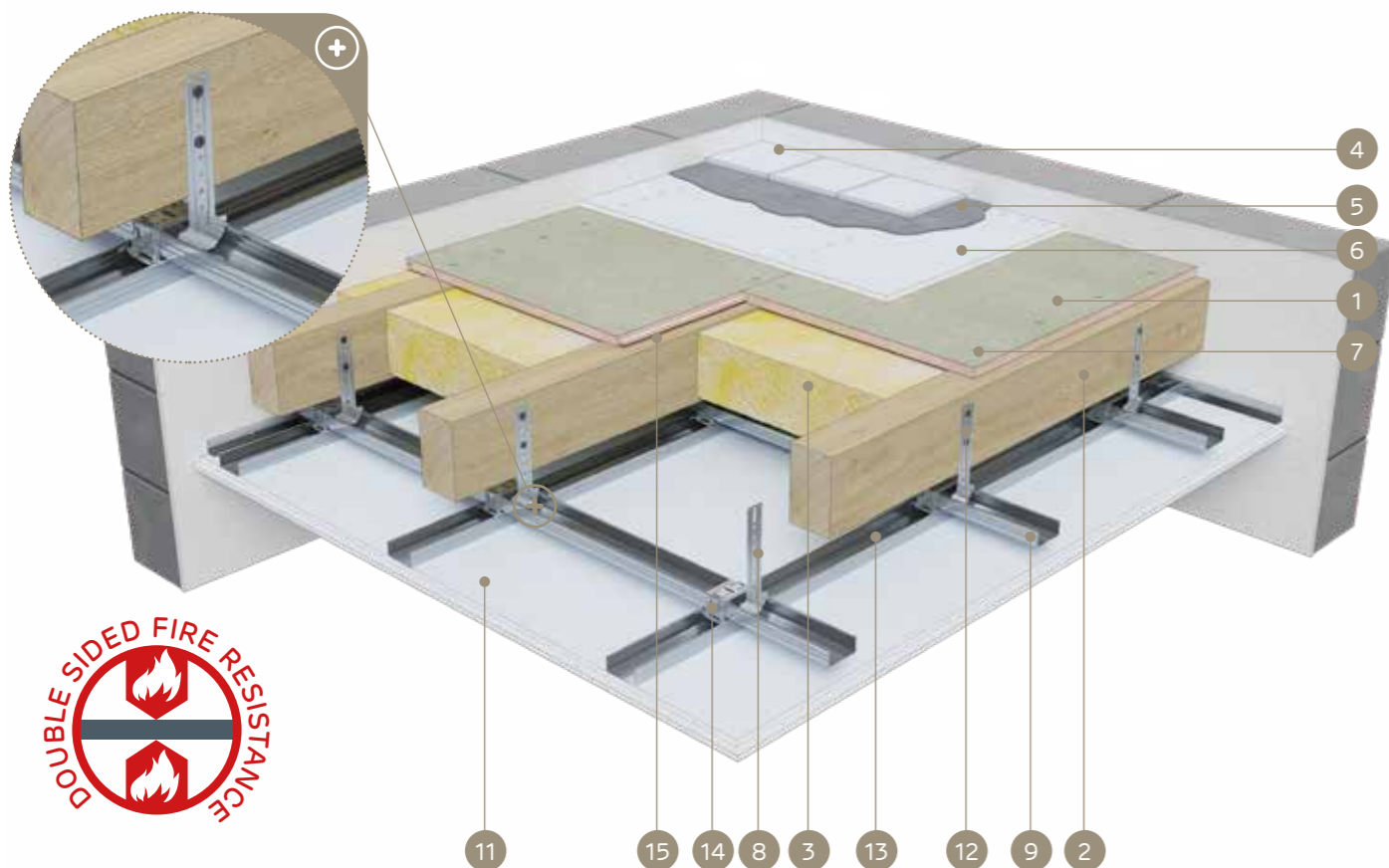
⁶⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.



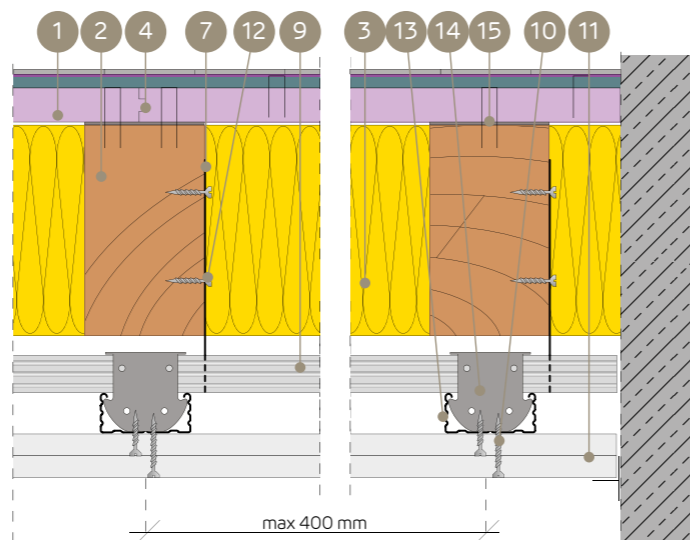
nida Strop DFire resistance class:
REI30Coefficient of effort α_{ul} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
53,5-56,7 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163N2P

SYSTEMS:

**G18/DPB1/C-D25/OGIEŃ+; G18/DPB1/C-D25/KOMPAKT;
G19/DPA2/C-D25/OGIEŃ+; G19/DPA2/C-D25/KOMPAKT**

MATERIALS:

1. Duripanel cement-particle board
2. Timber floor beams
3. Insulation material mineral wool
4. Floor finish (ceramic tiles, or parquet)
5. Cement adhesive for ceramic cladding
6. Cementex cement board
7. Duripanel board screws, or steel staples
8. Nida WP 60 loft hanger
9. Nida CD 60 top main profile
10. Nida sheet metal screws
11. Nida Ogień Plus or Nida Ogień Kompakt plasterboard
12. Nida wood screws
13. Nida CD 60 bottom loadbearing profile
14. Nida LK 60 cross connector
15. Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CERAMIC TILES, PARQUET)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the top side - Cement board (bonding layer)			Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾	Fire resistance class	Special system
	width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus			
	[mm]	[mm]																
G18/DPB1/C-D12/Ogień+	≥ 40	≥ 40	Duripanel B1	18	1387,0	Cementex	8	1387,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	53,5	REI30	●
G19/DPA2/C-D25/Ogień+	≥ 40	≥ 40	Duripanel A2	19	1387,0	Cementex	8	1387,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	56,7	REI30	●

¹⁾ Optionally, a single-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

• Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.

• Fixing of the Nida plasterboards in the crosswise arrangement.

• Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.

• The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.

• The detailed guidelines are presented in the ITB work no. 01060/21/R163N2P.

• The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D			
		G18/DPB1/C-D25/Ogień+	G18/DPB1/C-D25/Kompakt	G19/DPA2/C-D25/Ogień+	G19/DPA2/C-D25/Kompakt
		Consumption of material per 1m ²			
Duripanel B1 board 16 mm	m ²	1,0	1,0	-	-
Duripanel A2 board 19 mm	m ²	-	-	1,0	1,0
Cementex board 8 mm	m ²	1,0	1,0	1,0	1,0
Nida Ogień Plus 12,5 mm plasterboard	m ²	2,0	-	2,0	-
Nida Ogień Kompakt 25 mm plasterboard	m ²	-	1,0	-	1,0
Nida CD60 profile	lm	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5
Wood screws 3,5x45 mm	pcs.	8,0	8,0	8,0	8,0
Nida 3,5x25 mm sheet metal screws	pcs.	6,0	-	6,0	-
Nida 3,5x35 mm sheet metal screws	pcs.	18,0	18,0	18,0	18,0
Anchoring element ⁵⁾	pcs.	0,6	0,6	0,6	0,6
Duripanel board screws	pcs.	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾
Fixing elements - galvanised steel staples or screws for particle boards	pcs.	20	20	20	20
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,6	0,3	0,6	0,3
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾

⁴⁾ Optionally, it is possible to utilise galvanised steel staples.⁵⁾ The type of the anchoring element should be selected individually for a given wall structure type.⁶⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.

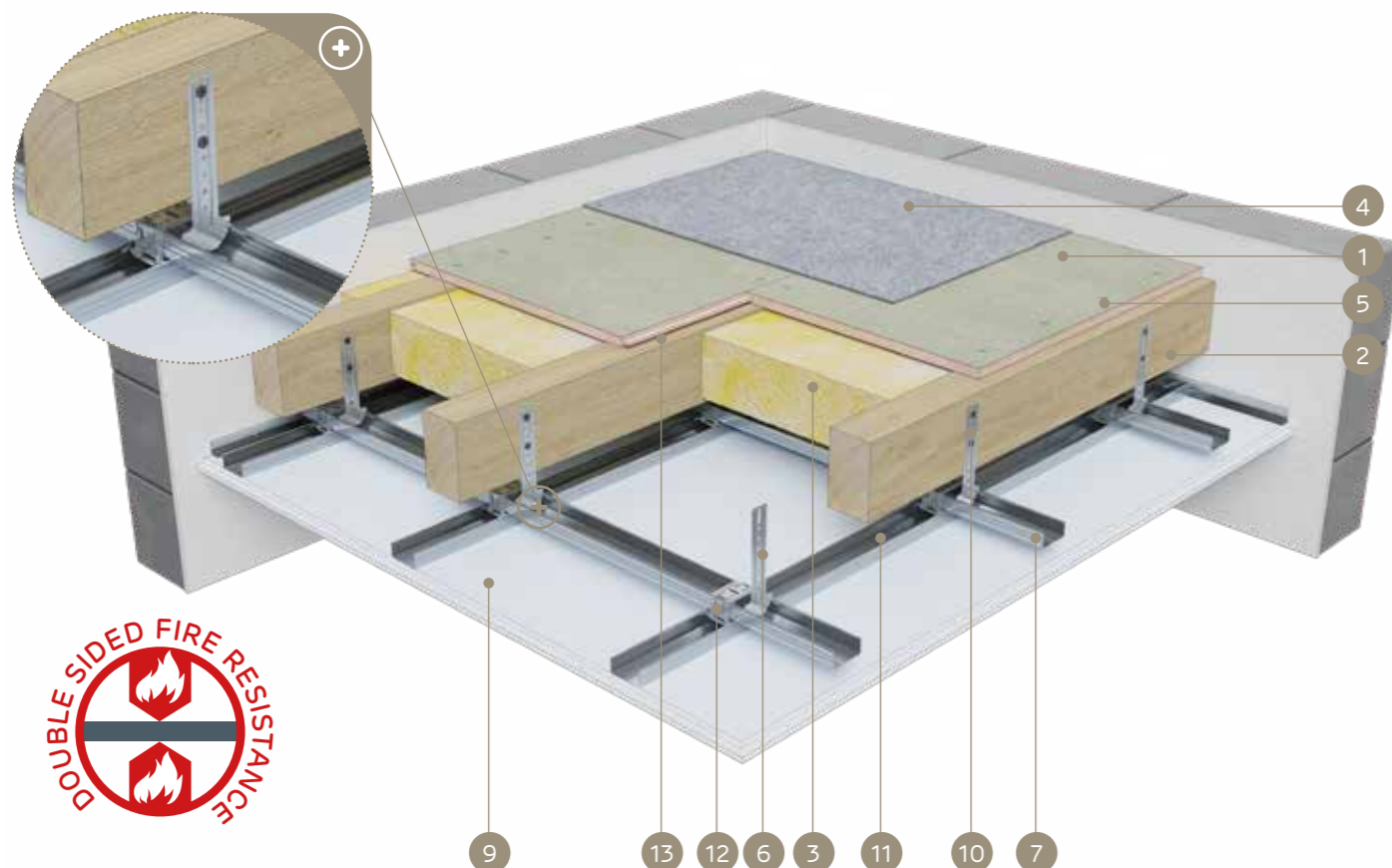


nida Strop D

Fire resistance class:
REI60Coefficient of effort α_{w} :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
42,5-60,8 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163NZP

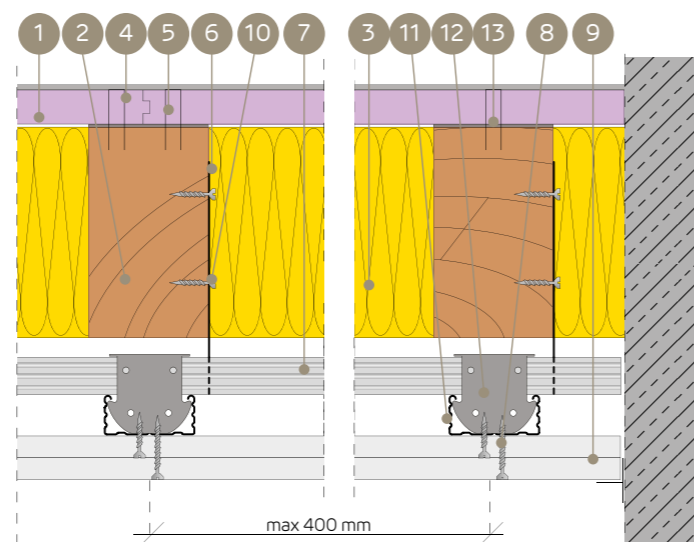
SYSTEMS:

G22/DPB1-D25/OGIEŃ+; G22/DPB1-D25/KOMPAKT; G18/DPB1-D25/OGIEŃ+; G18/DPB1-D25/KOMPAKT;
G22/DPA2-D25/OGIEŃ+; G22/DPA2-D25/KOMPAKT; G19/DPA2-D25/OGIEŃ+; G19/DPA2-D25/KOMPAKT;
G28/DPB1-D30/OGIEŃ+; G24/DPB1-D30/OGIEŃ+; G25/DPA2-D30/OGIEŃ+; G22/DPA2-D30/OGIEŃ+



MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (carpet, or floating floor)
- Duripanel board screws, or steel staples
- Nida WP 60 loft hanger
- Nida CD 60 top main profile
- Nida sheet metal screws
- Nida Ogień Plus or Nida Ogień Kompakt plasterboard
- Nida wood screws
- Nida CD 60 bottom loadbearing profile
- Nida LK 60 cross connector
- Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CARPET, FLOATING FLOOR)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Mass of encasement ²⁾ [kg/m²]	Fire resistance class [min]	Special system
	width - b [mm]	height - h [mm]	Name	Thickness [mm]	Density [kg/m³]	Name	Thickness [mm]	Density [kg/m³]	Thickness [mm]	Density min. [kg/m³]	Coefficient of effort [α_w]	Cross-section modulus b/h			
G22/DPB1-D25/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel B1	22	1250,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	47,5	REI60	●
G18/DPB1-D25/Ogień+	≥ 80	≥ 80	Duripanel B1	18	1250,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	42,5	REI60	●
G22/DPA2-D25/Ogień+	50 ÷ 59	50 ÷ 59	Duripanel A2	22	1350,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	49,7	REI60	●
G19/DPA2-D25/Ogień+	≥ 60	≥ 60	Duripanel A2	19	1350,0	Ogień Plus	2 x 12,5 ¹⁾	800,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	45,7	REI60	●
G28/DPB1-D30/Ogień+	80 ÷ 99	80 ÷ 99	Duripanel B1	28	1250,0	Ogień Plus	2 x 15,0	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	55,0	REI60	●
G24/DPB1-D30/Ogień+	≥ 100	≥ 100	Duripanel B1	24	1250,0	Ogień Plus	2 x 15,0	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	57,0	REI60	●
G25/DPA2-D30/Ogień+	80 ÷ 99	80 ÷ 99	Duripanel A2	25	1250,0	Ogień Plus	2 x 15,0	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	60,8	REI60	●
G22/DPA2-D30/Ogień+	≥ 100	≥ 100	Duripanel A2	22	1250,0	Ogień Plus	2 x 15,0	800,0	- ³⁾	- ³⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	56,7	REI60	●

¹⁾ Optionally, a single-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).

²⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.

³⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Fixing of the Nida plasterboards in the crosswise arrangement.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163NZP.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D											
		G22/DPB1-D25/Ogień+	G22/DPB1-D25/Kompakt	G18/DPB1-D25/Ogień+	G18/DPB1-D25/Kompakt	G22/DPA2-D25/Ogień+	G22/DPA2-D25/Kompakt	G19/DPA2-D25/Ogień+	G19/DPA2-D25/Kompakt	G28/DPB1-D30/Ogień+	G24/DPB1-D30/Ogień+	G25/DPA2-D30/Ogień+	G22/DPA2-D30/Ogień+
		Consumption of material per 1m ²											
Duripanel B1 board 16 mm	m ²	-	-	1,0	1,0	-	-	-	-	-	-	-	-
Duripanel A2 board 19 mm	m ²	-	-	-	-	-	-	1,0	1,0	-	-	-	-
Duripanel B1 board 22 mm	m ²	1,0	1,0	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 22 mm	m ²	-	-	-	-	1,0	1,0	-	-	-	-	-	1,0
Duripanel B1 board 24 mm	m ²	-	-	-	-	-	-	-	-	-	1,0	-	-
Duripanel A2 board 25 mm	m ²	-	-	-	-	-	-	-	-	-	-	1,0	-
Duripanel B1 board 28 mm	m ²	-	-	-	-	-	-	-	-	1,0	-	-	-
Nida Ogień Plus 12,5 mm plasterboard	m ²	2,0	-	2,0	-	2,0	-	2,0	-	-	-	-	-
Nida Ogień Plus 15 mm plasterboard	m ²	-	-	-	-	-	-	-	-	2,0	2,0	2,0	2,0
Nida Ogień Kompakt 25 mm plasterboard	m ²	-	1,0	-	1,0	-	1,0	-	1,0	-	-	-	-
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	-	6,0	-	6,0	-	6,0	-	6,0	6,0	6,0	6,0
Nida 3.5x35 mm sheet metal screws	pcs.	18,0	18,0	18,0	18,0	18,0	18,0	18,0	6,0	-	-	-	-
Nida 3.5x45 mm sheet metal screws	pcs.	-	-	-	-	-	-	-	-	18,0	18,0	18,0	18,0
Anchoring element ⁵⁾	pcs.	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Duripanel board screws	pcs.	10 ⁴⁾	10 ⁴⁾	20 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,6	0,3	0,6	0,3	0,6	0,3	0,6	0,3	0,6	0,6	0,6	0,6
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾	1,0 ⁶⁾

⁴⁾ Optionally, it is possible to utilise galvanised steel staples.

⁵⁾ The type of the anchoring element should be selected individually for a given wall structure type.

⁶⁾ Application acc. to the requirements.

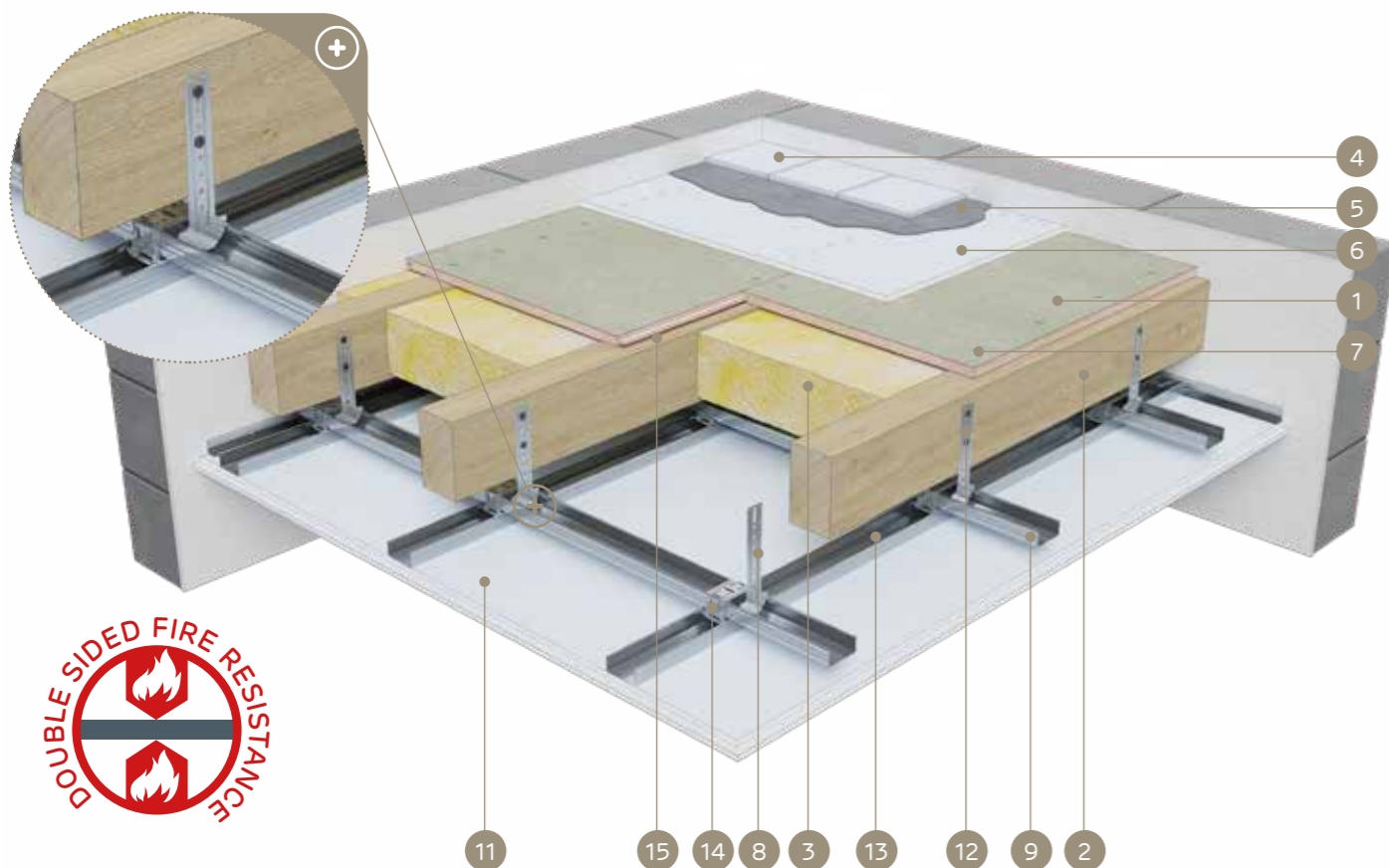
The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop D

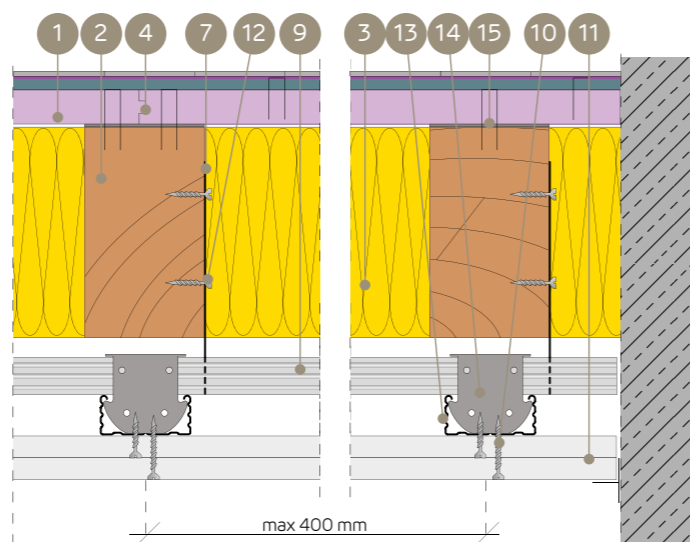
Fire resistance class:
REI60Coefficient of effort α_w :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
49,5-56,7 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163N2P

SYSTEMS:

G18/DPB1/C-D30/OGIEŃ+; G19/DPA2/C-D30/OGIEŃ+;
G22/DPB1/C-D30/OGIEŃ+; G22/DPA2/C-D30/OGIEŃ+

MATERIALS:

1. Duripanel cement-particle board
2. Timber floor beams
3. Insulation material mineral wool
4. Floor finish (ceramic tiles, or parquet)
5. Cement adhesive for ceramic cladding
6. Cementex cement board
7. Duripanel board screws, or steel staples
8. Nida WP 60 loft hanger
9. Nida CD 60 top main profile
10. Nida sheet metal screws
11. Nida Ogień Plus or Nida Ogień Kompakt plasterboard
12. Nida wood screws
13. Nida CD 60 bottom loadbearing profile
14. Nida LK 60 cross connector
15. Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CERAMIC TILES, PARQUET)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the top side - Cement board (bonding layer)			Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Mass of encasement ¹⁾ [kg/m ²]	Fire resistance class	Special system
	width - b	height - h	Name	Thickness	Density	Name	Thickness	Density	Name	Thickness	Density	Thickness	Density min.	Coefficient of effort	Cross-section modulus			
	[mm]	[mm]																
G18/DPB1/C-D30/Ogień+	≥ 50	≥ 50	Duripanel B1	18	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	49,5	REI60	●
G19/DPA2/C-D30/Ogień+	≥ 50	≥ 50	Duripanel A2	19	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	equal to h - of beam	26,0	1,0 ÷ 0,6	1,0 ÷ 0,25	52,7	REI60	●
G22/DPB1/C-D30/Ogień+	60 ÷ 99	60 ÷ 99	Duripanel B1	22	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	- ²⁾	- ²⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	54,5	REI60	●
G18/DPB1/C-D30/Ogień+	≥ 100	≥ 100	Duripanel B1	18	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	- ²⁾	- ²⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	49,5	REI60	●
G22/DPA2/C-D30/Ogień+	50 ÷ 59	50 ÷ 59	Duripanel A2	22	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	- ²⁾	- ²⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	56,7	REI60	●
G19/DPA2/C-D30/Ogień+	≥ 60	≥ 60	Duripanel A2	19	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 15,0	800,0	- ²⁾	- ²⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	52,7	REI60	●

¹⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.²⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
- Fixing of the Nida plasterboards in the crosswise arrangement.
- Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
- The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
- The detailed guidelines are presented in the ITB work no. 01060/21/R163N2P.
- The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D			
		G18/DPB1/C-D30/Ogień+	G19/DPA2/C-D30/Ogień+	G22/DPB1/C-D30/Ogień+	G22/DPA2/C-D30/Ogień+
		Consumption of material per 1m ²			
Duripanel B1 board 16 mm	m ²	1,0	-	-	-
Duripanel A2 board 19 mm	m ²	-	1,0	-	-
Duripanel B1 board 22 mm	m ²	-	-	1,0	-
Duripanel A2 board 22 mm	m ²	-	-	-	1,0
Cementex board 8 mm	m ²	1,0	1,0	1,0	1,0
Nida Ogień Plus 15 mm plasterboard	m ²	2,0	2,0	2,0	2,0
Nida CD60 profile	lm	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	6,0	6,0	6,0
Nida 3.5x45 mm sheet metal screws	pcs.	18,0	18,0	18,0	18,0
Anchoring element ³⁾	pcs.	0,6	0,6	0,6	0,6
Duripanel board screws	pcs.	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾	10 ⁴⁾
Fixing elements - galvanised steel staples or screws for particle boards	pcs.	20	20	20	20
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,6	0,6	0,6	0,6
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾	1,0 ⁵⁾

³⁾ The type of the anchoring element should be selected individually for a given wall structure type.⁴⁾ Optionally, it is possible to utilise galvanised steel staples.⁵⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop D



Fire resistance class:
REI90



Coefficient of effort α_w :
1,0-0,6



Cross-section modulus b/h:
1,0-0,25



Weight of 1m² of encasement:
63,8-91,3 kg

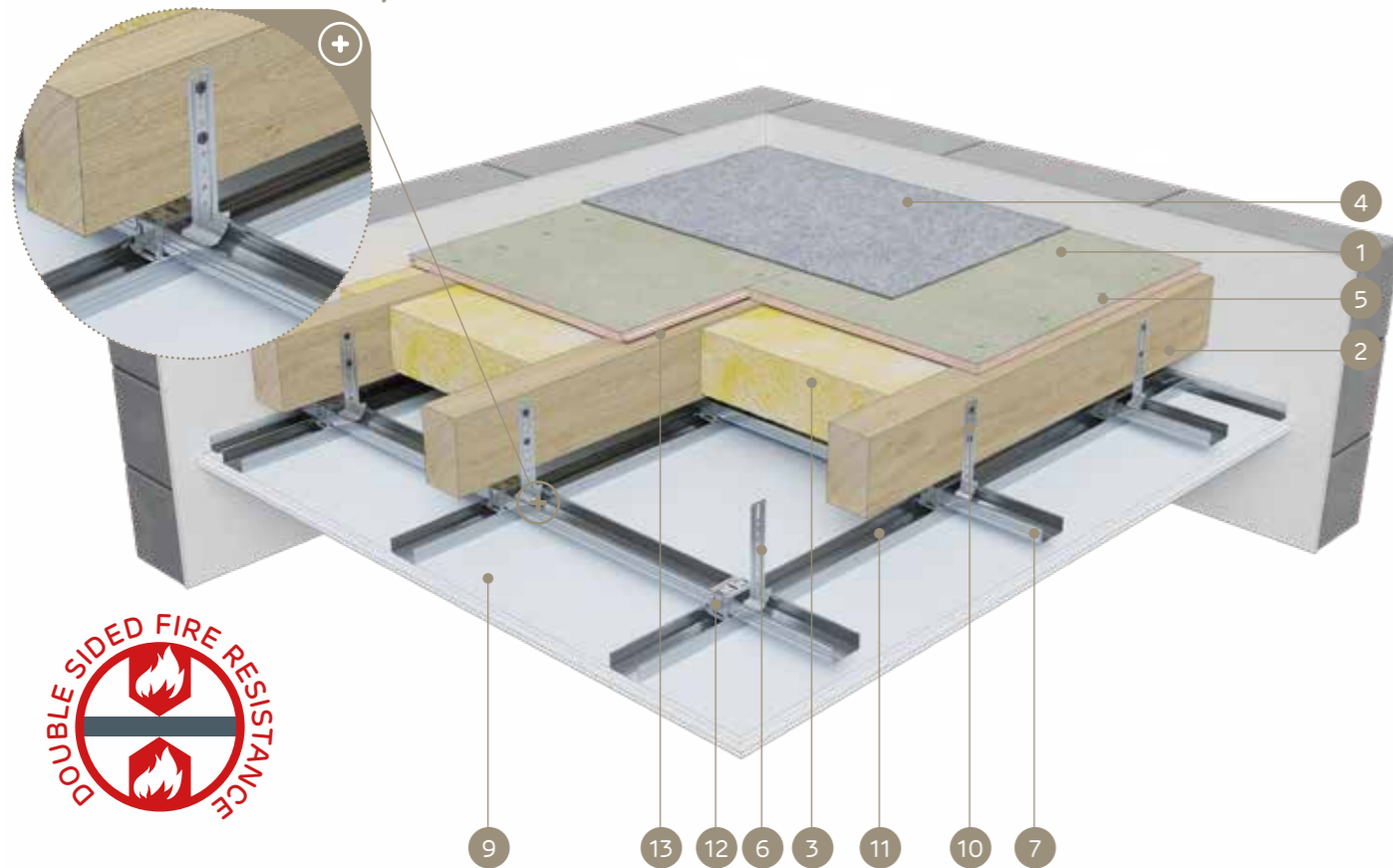


Number of related document:
Fire classification of ITB

Fire classification of ITB:
ITB 01060/21/R163NZP

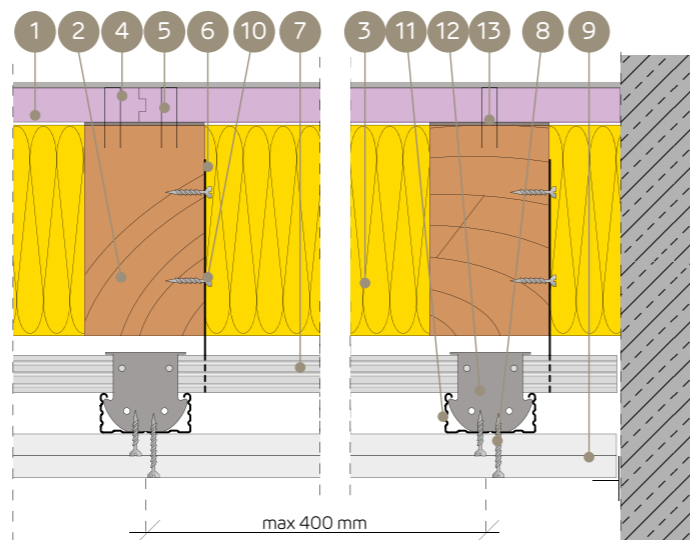
SYSTEMS:

**G32/DPB1-D37,5/OGIEŃ+; G28/DPB1-D37,5/OGIEŃ+; G28/DPA2-D37,5/OGIEŃ+;
G25/DPA2-D37,5/OGIEŃ+; G40/DPB1-D50/OGIEŃ+; G36/DPB1-D40/KOMPAKT;
G38/DPA2-D50/OGIEŃ+; G32/DPA2-D40/KOMPAKT**



MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (carpet, or floating floor)
- Duripanel board screws, or steel staples
- Nida WP 60 loft hanger
- Nida CD 60 top main profile
- Nida sheet metal screws
- Nida Ogień Plus or Nida Ogień Kompakt plasterboard
- Nida wood screws
- Nida CD 60 bottom loadbearing profile
- Nida LK 60 cross connector
- Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CARPET, FLOATING FLOOR)

TECHNICAL PARAMETERS

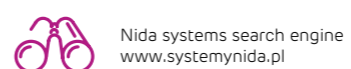
System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Mass of encasement ³⁾ [kg/m²]	Fire resistance class [min]	Special system
	width - b [mm]	height - h [mm]	Name	Thickness [mm]	Density [kg/m³]	Name	Thickness [mm]	Density [kg/m³]	Thickness [mm]	Density min. [kg/m³]	Coefficient of effort α_w	Cross-section modulus b/h			
G32/DPB1-D37,5/Ogień+	80 ÷ 99	80 ÷ 99	Duripanel B1	32	1250,0	Ogień Plus	3 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	70,0	REI90	●
G28/DPB1-D37,5/Ogień+	≥ 100	≥ 100	Duripanel B1	28	1250,0	Ogień Plus	3 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	65,0	REI90	●
G28/DPA2-D37,5/Ogień+	80 ÷ 99	80 ÷ 99	Duripanel A2	28	1350,0	Ogień Plus	3 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	67,8	REI90	●
G25/DPA2-D37,5/Ogień+	≥ 100	≥ 100	Duripanel A2	25	1350,0	Ogień Plus	3 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	63,8	REI90	●
G40/DPB1-D50/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel B1	40	1250,0	Ogień Plus	4 x 12,5 ²⁾	800,0	- ⁴⁾	- ⁴⁾	≥ 0,8	1,0	80,0	REI90	●
G36/DPB1-D40/Kompakt	≥ 100	≥ 100	Duripanel B1	36	1250,0	Ogień Kompakt	2 x 20	800,0	- ⁴⁾	- ⁴⁾	≥ 0,8	1,0	78,4	REI90	●
G38/DPA2-D50/Ogień+	40 ÷ 59	40 ÷ 59	Duripanel A2	28 + 10	1250,0	Ogień Plus	4 x 12,5 ²⁾	800,0	- ⁴⁾	- ⁴⁾	≥ 0,8	1,0 ÷ 0,25	91,3	REI90	●
G32/DPA2-D40/Kompakt	≥ 80	≥ 80	Duripanel A2	32	1250,0	Ogień Kompakt	2 x 20	800,0	- ⁴⁾	- ⁴⁾	≥ 0,8	1,0 ÷ 0,25	76,6	REI90	●

- Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm + Nida Ogień Plus type DF 1x12,5 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).
 - Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 2x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).
 - The weight does not include the mass of the timber floor load-bearing structure and the insulation material.
 - Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).
- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
 - Fixing of the Nida plasterboards in the crosswise arrangement.
 - Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
 - The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
 - The detailed guidelines are presented in the ITB work no. 01060/21/R163NZP.
 - The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D													
		G32/DPB1-D37,5/Ogień+	G32/DPB1-D37,5/Ogień+Kompakt	G28/DPB1-D37,5/Ogień+	G28/DPB1-D37,5/Ogień+Kompakt	G28/DPA2-D37,5/Ogień+	G28/DPA2-D37,5/Ogień+Kompakt	G36/DPB1-D40/Kompakt	G36/DPB1-D40/Kompakt	G40/DPB1-D50/Kompakt	G38/DPA2-D50/Ogień+	G38/DPA2-D50/Kompakt	G32/DPA2-D40/Kompakt		
		Consumption of material per 1m²													
Duripanel B1 board 28 mm	m²	-	-	1,0	1,0	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 10 mm	m²	-	-	-	-	-	-	-	-	-	-	-	-	1,0	1,0
Duripanel B1 board 32 mm	m²	1,0	1,0	-	-	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 25 mm	m²	-	-	-	-	-	-	1,0	1,0	-	-	-	-	-	-
Duripanel A2 board 28 mm	m²	-	-	-	-	1,0	1,0	-	-	-	-	-	1,0	1,0	-
Duripanel B1 board 36 mm	m²	-	-	-	-	-	-	-	-	-	-	-	1,0	-	-
Duripanel B1 board 40 mm	m²	-	-	-	-	-	-	-	-	1,0	1,0	-	-	-	-
Duripanel A2 board 32 mm	m²	-	-	-	-	-	-	-	-	-	-	-	-	-	1,0
Nida Ogień Plus 12,5 mm plasterboard	m²	3,0	1,0	3,0	1,0	3,0	1,0	3,0	1,0	4,0	-	-	4,0	-	-
Nida Ogień Kompakt 20 mm plasterboard	m²	-	-	-	-	-	-	-	-	-	2,0	-	-	-	2,0
Nida Ogień Kompakt 25 mm plasterboard	m²	-	1,0	-	1,0	-	1,0	-	1,0	-	2,0	-	-	2,0	-
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	-	-	6,0	6,0	-
Nida 3.5x35 mm sheet metal screws	pcs.	6,0	-	6,0	-	6,0	-	6,0	-	6,0	6,0	6,0	6,0	6,0	6,0
Nida 3.5x45 mm sheet metal screws	pcs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nida 3.5x55 mm sheet metal screws	pcs.	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
Nida 4.2x70 mm sheet metal screws	pcs.	-	-	-	-	-	-	-	-	18,0	18,0	-	18,0	18,0	-
Anchoring element ⁵⁾	pcs.	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Duripanel board screws	pcs.	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	20 ⁶⁾	20 ⁶⁾
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,9	0,6	0,9	0,6	0,9	0,6	0,9	0,6	0,9	0,6	0,9	0,6	0,9	0,6
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m²	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾

- The type of the anchoring element should be selected individually for a given wall structure type.
 - Optionally, it is possible to utilise galvanised steel staples.
 - Application acc. to the requirements.
- The standards concerning the amount of utilised material do not cover the loss of the material.



Explore the characteristics of the Duripanel board – enter www.siniat.pl and download the brochure!



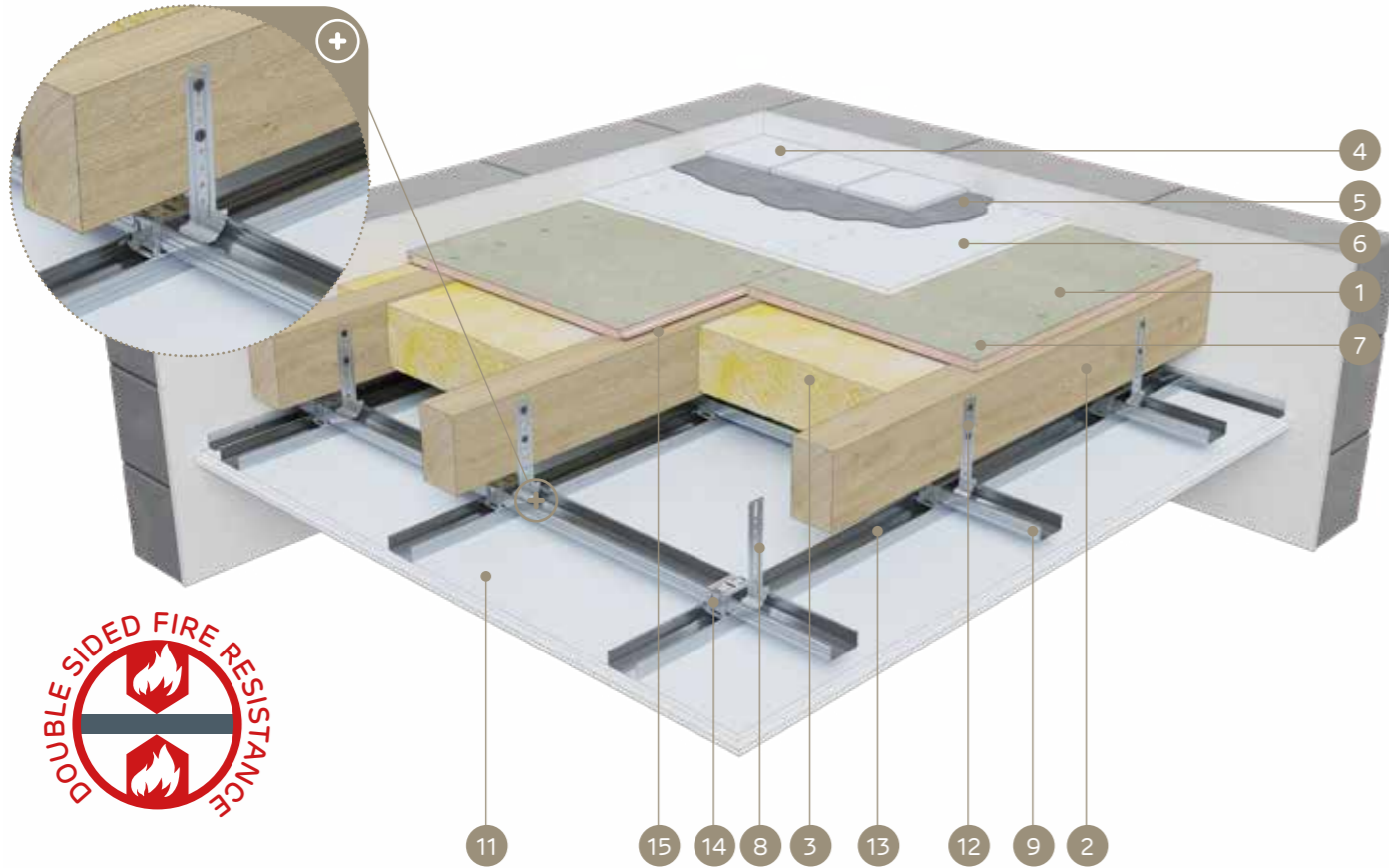
nida Strop D

Fire resistance class: REI90	Coefficient of effort α_M : 1,0-0,6	Cross-section modulus b/h: 1,0-0,25	Weight of 1m ² of encasement: 52,0-102,3	Number of related document: Fire classification of ITB
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Fire classification of ITB:
ITB 01060/21/R163NZIP

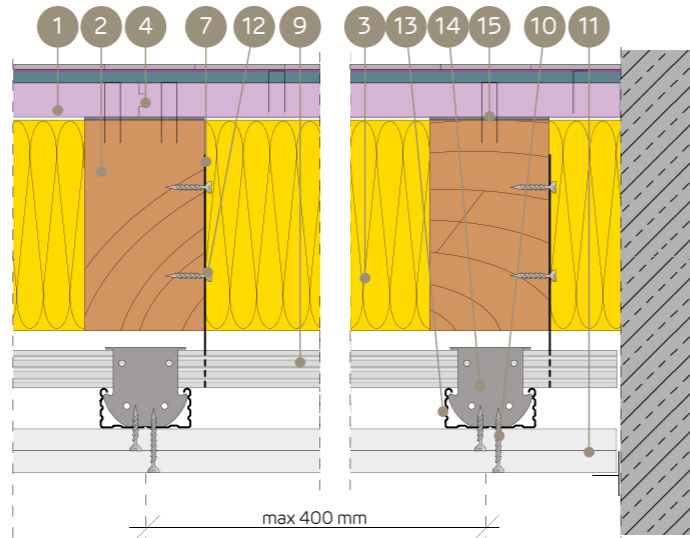
SYSTEMS:

G24/DPB1/C-D37,5/OGIEŃ+; G22/DPA2/C-D37,5/OGIEŃ+; G20/DPB1/C-D30/OGIEŃ+; G19/DPA2/C-D30/OGIEŃ+; G40/DPB1/C-D50/OGIEŃ+; G32/DPB1/C-D40/KOMPAKT; G36/DPA2/C-D50/OGIEŃ+; G28/DPA2/C-D40/KOMPAKT



MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (ceramic tiles, or parquet)
- Cement adhesive for ceramic cladding
- Cementex cement board
- Duripanel board screws, or steel staples
- Nida WP 60 loft hanger
- Nida CD 60 top main profile
- Nida sheet metal screws
- Nida Ogień Plus or Nida Ogień Kompakt plasterboard
- Nida wood screws
- Nida CD 60 bottom loadbearing profile
- Nida LK 60 cross connector
- Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CERAMIC TILES, PARQUET)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the top side - Cement board (bonding layer)			Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Mass of encasement ³⁾ [kg/m ²]	Fire resistance class [min]	Special system
	width	height	Name	Thickness [mm]	Density [kg/m ³]	Name	Thickness [mm]	Density [kg/m ³]	Name	Thickness [mm]	Density [kg/m ³]	Thickness [mm]	Density min. [kg/m ³]	Coefficient of effort [α _M]	Cross-section modulus b/h			
	[mm]	[mm]																
G24/DPB1/C-D37,5/Ogień+	80 ÷ 99	80 ÷ 99	Duripanel B1	24	1250,0	Cementex	8	1387,0	Ogień Plus	3 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0	1,0 ÷ 0,25	71,0	REI90	●
G22/DPA2/C-D37,5/Ogień+	80 ÷ 99	80 ÷ 99	Duripanel A2	22	1350,0	Cementex	8	1387,0	Ogień Plus	3 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0	1,0 ÷ 0,25	70,7	REI90	●
G20/DPB1/C-D30/Ogień+	≥ 100	≥ 100	Duripanel B1	20	1250,0	Cementex	8	1387,0	Ogień Plus	2 x 15	800,0	equal to h - of beam	50,0	1,0	1,0 ÷ 0,25	52,0	REI90	●
G19/DPA2/C-D30/Ogień+	≥ 100	≥ 100	Duripanel A2	19	1350,0	Cementex	8	1387,0	Ogień Plus	2 x 15	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	63,7	REI90	●
G40/DPB1/C-D50/Ogień+	≥ 40	≥ 40	Duripanel B1	40	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	101,0	REI90	●
G32/DPB1/C-D40/Kompakt	≥ 100	≥ 100	Duripanel B1	32 ¹⁾	1250,0	Cementex	8	1387,0	Ogień Kompakt	2 x 20	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,5	84,4	REI90	●
G36/DPA2/C-D50/Ogień+	≥ 40	≥ 40	Duripanel A2	22 + 16	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	102,3	REI90	●
G28/DPA2/C-D40/Kompakt	≥ 100	≥ 100	Duripanel A2	28 ¹⁾	1350,0	Cementex	8	1387,0	Ogień Kompakt	2 x 20	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,5	82,2	REI90	●

- ¹⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm + Nida Ogień Plus type DF 1x12.5 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).
- ²⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 2x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).
- ³⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.
- ⁴⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).
- Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
 - Fixing of the Nida plasterboards in the crosswise arrangement.
 - Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
 - The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZZ, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
 - The detailed guidelines are presented in the ITB work no. 01060/21/R163NZIP.
 - The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D																	
		G24/DPB1/C-D37,5/Ogień+	G22/DPA2/C-D37,5/Ogień+Kompakt	G20/DPB1/C-D30/Ogień+	G19/DPA2/C-D30/Ogień+Kompakt	G40/DPB1/C-D50/Ogień+	G32/DPB1/C-D40/Kompakt	G36/DPA2/C-D50/Ogień+	G28/DPA2/C-D40/Kompakt	G24/DPB1/C-D37,5/Ogień+	G22/DPA2/C-D37,5/Ogień+Kompakt								
Consumption of material per 1m ²																			
Duripanel B1 board 20 mm	m ²	-	-	-	-	1,0	-	-	-	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 16 mm	m ²	-	-	-	-	-	-	-	-	-	-	-	-	-	1,0	1,0	-	-	-
Duripanel B1 board 24 mm	m ²	1,0	1,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 19 mm	m ²	-	-	-	-	-	-	-	-	1,0	-	-	-	-	-	-	-	-	-
Duripanel A2 board 22 mm	m ²	-	-	1,0	1,0	-	-	-	-	-	-	-	-	-	-	1,0	1,0	-	-
Duripanel B1 board 32 mm	m ²	-	-	-	-	-	-	-	-	-	-	-	-	-	1,0	-	-	-	-
Duripanel B1 board 40 mm	m ²	-	-	-	-	-	-	-	-	-	1,0	1,0	-	-	-	-	-	-	-
Duripanel A2 board 28 mm	m ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,0	-
Cementex board 8 mm	m ²	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Nida Ogień Plus 12.5 mm plasterboard	m ²	3,0	1,0	3,0	1,0	-	-	-	-	-	4,0	-	-	-	4,0	-	-	-	-
Nida Ogień Plus 15 mm plasterboard	m ²	-	-	-	-	-	-	-	-	2,0	2,0	-	-	-	-	-	-	-	-
Nida Ogień Kompakt 20 mm plasterboard	m ²	-	-	-	-	-	-	-	-	-	-	-	-	2,0	-	-	-	2,0	-
Nida Ogień Kompakt 25 mm plasterboard	m ²	-	1,0	-	1,0	-	-	-	-	-	-	-	2,0	-	-	-	2,0	-	-
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-
Nida 3.5x35 mm sheet metal screws	pcs.	6,0	6,0	6,0	6,0	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-
Nida 3.5x45 mm sheet metal screws	pcs.	-	-	-	-	18,0	-	18,0	-	-	-	-	-	-	-	-	-	-	-
Nida 3.5x55 mm sheet metal screws	pcs.	18,0	18,0	18,0	18,0	-	-	-	-	6,0	-	-	18,0	6,0	-	-	18,0	6,0	-
Nida 4.2x70 mm sheet metal screws	pcs.	-	-	-	-	-	-	-	-	18,0	18,0	-	-	18,0	18,0	-	-	18,0	18,0
Anchoring element ⁵⁾	pcs.	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Fixing elements - galvanised steel staples or screws for particle boards	pcs.	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Duripanel board screws	pcs.	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	0,9	0,6	0,9	0,6	0,6	0,6	0,6	0,6	1,2	0,6	0,6	1,2	0,6	1,2	0,6	0,6	0,6	0,6
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾

- ⁵⁾ The type of the anchoring element should be selected individually for a given wall structure type.
- ⁶⁾ Optionally, it is possible to utilise galvanised steel staples.
- ⁷⁾ Application acc. to the requirements.
- The standards concerning the amount of utilised material do not cover the loss of the material.

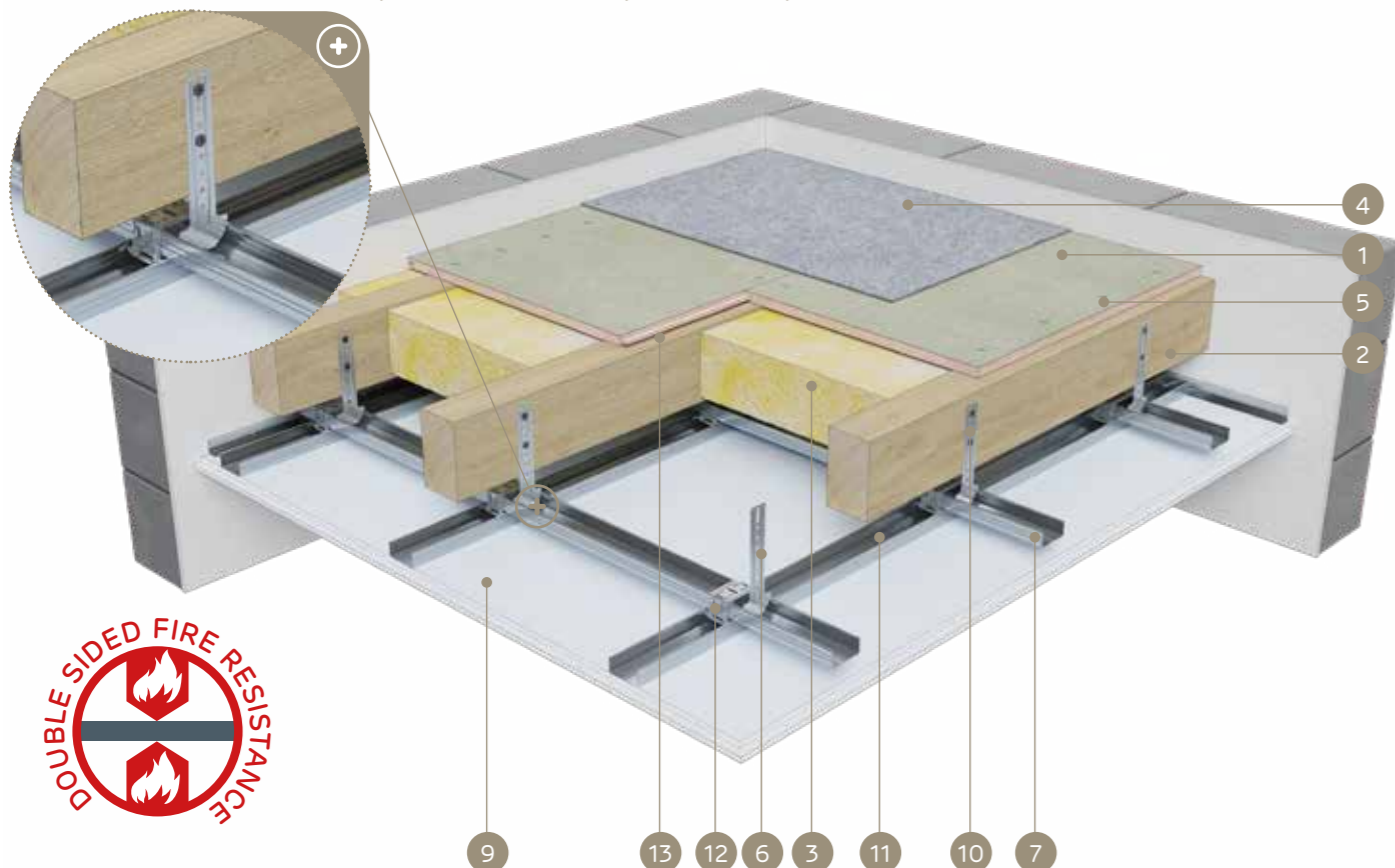


nida Strop D

Fire resistance class:
REI120Coefficient of effort α_w :
1,0-0,6Cross-section modulus b/h:
1,0-0,25Weight of 1m² of encasement:
73,2-120,0 kgNumber of related document:
Fire classification of ITBFire classification of ITB:
ITB 01060/21/R163N3P

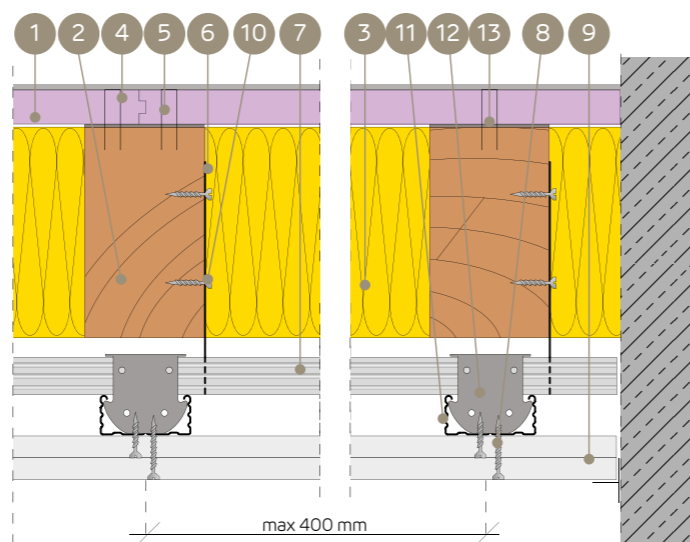
SYSTEMS:

G48/DPB1-D50/OGIEŃ+; G40/DPB1-D50/OGIEŃ+; G40/DPA2-D50/OGIEŃ+;
G38/DPA2-D50/OGIEŃ+; G36/DPB1-D37,5/OGIEŃ+; G32/DPA2-D37,5/OGIEŃ+;
G64/DPB1-D50/OGIEŃ+; G56/DPB1-D37,5/OGIEŃ+; G48/DPA2-D50/OGIEŃ+



MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (carpet, or floating floor)
- Duripanel board screws, or steel staples
- Nida WP 60 loft hanger
- Nida CD 60 top main profile
- Nida sheet metal screws
- Nida Ogień Plus or Nida Ogień Kompakt plasterboard
- Nida wood screws
- Nida CD 60 bottom loadbearing profile
- Nida LK 60 cross connector
- Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CARPET, FLOATING FLOOR)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Mass of encasement ³⁾ [kg/m²]	Fire resistance class	Special system
	width - b [mm]	height - h [mm]	Name	Thickness [mm]	Density [kg/m³]	Name	Thickness [mm]	Density [kg/m³]	Thickness [mm]	Density [kg/m³]	Coefficient of effort [α_w]	Cross-section modulus b/h			
G48/DPB1-D50/Ogień+	≥ 80	≥ 80	Duripanel B1	32 +16	1250,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0 ÷ 0,25	100,0	REI120	●
G40/DPB1-D50/Ogień+	≥ 100	≥ 100	Duripanel B1	40	1250,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0 ÷ 0,25	90,0	REI120	●
G40/DPA2-D50/Ogień+	≥ 80	≥ 80	Duripanel A2	22 +19	1350,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	95,4	REI120	●
G38/DPA2-D50/Ogień+	≥ 100	≥ 100	Duripanel A2	16 +22	1350,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	91,3	REI120	●
G36/DPB1-D37,5/Ogień+	≥ 60	≥ 120	Duripanel B1	36	1350,0	Ogień Plus	3 x 12,5 ²⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,5	75,0	REI120	●
G32/DPA2-D37,5/Ogień+	≥ 60	≥ 120	Duripanel A2	32	1350,0	Ogień Plus	3 x 12,5 ²⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	73,2	REI120	●
G64/DPB1-D50/Ogień+	≥ 100	≥ 100	Duripanel B1	40 +24	1250,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0	120,0	REI120	●
G56/DPB1-D37,5/Ogień+	≥ 100	≥ 100	Duripanel B1	2 x 28	1250,0	Ogień Plus	3 x 12,5 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,8	1,0 ÷ 0,5	100,0	REI120	●
G48/DPA2-D50/Ogień+	≥ 100	≥ 100	Duripanel A2	32 +16	1250,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0	104,8	REI120	●

¹⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 2x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).

²⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm + Nida Ogień Plus type DF 1x12,5 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).

³⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.

⁴⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).

• Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.

• Fixing of the Nida plasterboards in the crosswise arrangement.

• Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.

• The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112NZK, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.

• The detailed guidelines are presented in the ITB work no. 01060/21/R163N3P.

• The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D															
		G48/DPB1-D50/Ogień+	G48/DPB1-D50/Ogień+	G40/DPB1-D50/Ogień+	G40/DPB1-D50/Ogień+	G40/DPA2-D50/Ogień+	G40/DPA2-D50/Ogień+	G38/DPA2-D50/Ogień+	G36/DPB1-D37,5/Ogień+	G32/DPA2-D37,5/Ogień+	G32/DPA2-D37,5/Ogień+	G56/DPB1-D37,5/Ogień+	G64/DPB1-D50/Ogień+	G64/DPB1-D50/Ogień+	G56/DPB1-D37,5/Ogień+	G48/DPA2-D50/Ogień+	
Consumption of material per 1m ²																	
Duripanel B1 board 16 mm	m ²	1,0	1,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 16 mm	m ²	-	-	-	-	-	1,0	1,0	-	-	-	-	-	-	-	-	1,0
Duripanel B1 board 24 mm	m ²	-	-	-	-	1,0	1,0	-	-	-	-	-	-	-	-	-	-
Duripanel B1 board 28 mm	m ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,0	2,0
Duripanel A2 board 22 mm	m ²	-	-	-	-	1,0	1,0	1,0	-	-	-	-	-	-	-	-	-
Duripanel B1 board 32 mm	m ²	1,0	1,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 32 mm	m ²	-	-	-	-	-	-	-	-	-	1,0	1,0	-	-	-	-	1,0
Duripanel B1 board 36 mm	m ²	-	-	-	-	-	-	-	-	1,0	1,0	-	-	-	-	-	-
Duripanel B1 board 40 mm	m ²	-	-	1,0	1,0	-	-	-	-	-	-	1,0	1,0	-	-	-	-
Nida Ogień Plus 12,5 mm plasterboard	m ²	4,0	-	4,0	-	4,0	1,0	4,0	-	3,0	1,0	3,0	1,0	4,0	-	3,0	1,0
Nida Ogień Kompakt 25 mm plasterboard	m ²	-	2,0	-	2,0	-	2,0	-	2,0	-	1,0	-	1,0	-	2,0	-	2,0
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-
Nida 3.5x35 mm sheet metal screws	pcs.	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Nida 3.5x45 mm sheet metal screws	pcs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nida 3.5x55 mm sheet metal screws	pcs.	6,0	-	6,0	-	6,0	-	6,0	-	18,0	18,0	18,0	18,0	6,0	-	18,0	18,0
Nida 4.2x70 mm sheet metal screws	pcs.	18,0	18,0	18,0	18,0	18,0	18,0	18,0	-	-	-	-	18,0	18,0	-	-	18,0
Anchoring element ⁵⁾	pcs.	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Duripanel board screws	pcs.	20 ⁶⁾	20 ⁶⁾	10 ⁶⁾	10 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	10 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	1,2	0,6	1,2	0,6	1,2	0,6	0,9	0,6	0,9	0,6	0,9	0,6	1,2	0,6	0,9	0,6
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m ²	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾

⁵⁾ The type of the anchoring element should be selected individually for a given wall structure type.

⁶⁾ Optionally, it is possible to utilise galvanised steel staples.

⁷⁾ Application acc. to the requirements.

The standards concerning the amount of utilised material do not cover the loss of the material.



nida Strop D



Fire resistance class:
REI120



Coefficient of effort α_{w} :
1,0-0,6



Cross-section modulus b/h:
1,0-0,25



Weight of 1m² of encasement:
94,2-129,8 kg

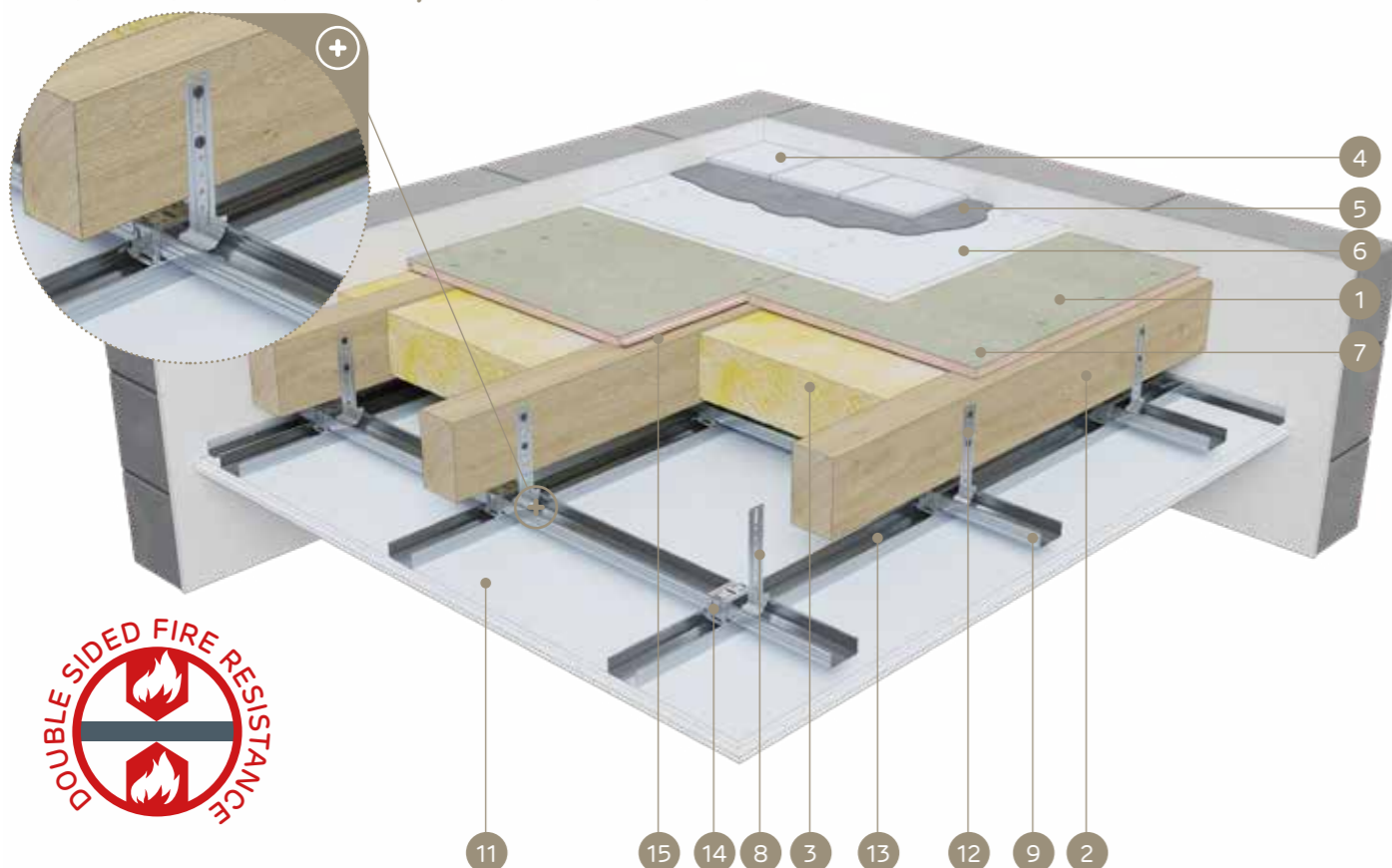


Number of related document:
Fire classification of ITB

Fire classification of ITB:
ITB 01060/21/R163N2P

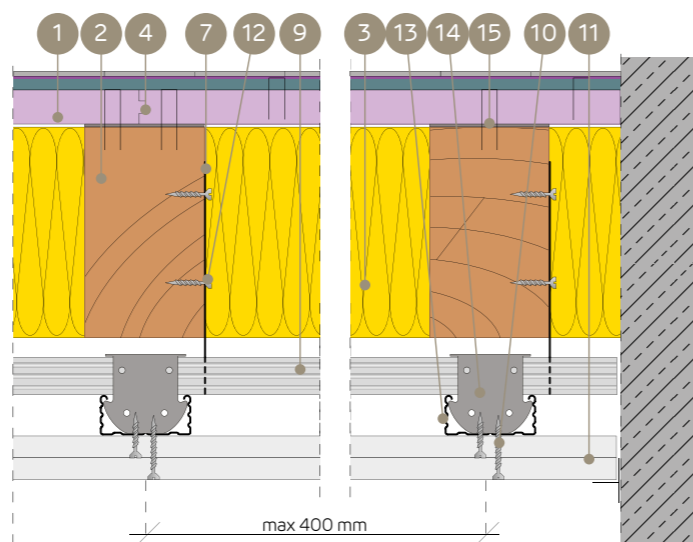
SYSTEMS:

G44/DPB1/C-D50/OGIEŃ+; G38/DPA2/C-D50/OGIEŃ+; G40/DPB1/C-D50/OGIEŃ+; G32/DPA2/C-D50/OGIEŃ+; G56/DPB1/C-D60/OGIEŃ+; G44/DPB1/C-D50/OGIEŃ+; G48/DPA2/C-D60/OGIEŃ+; G40/DPA2/C-D50/OGIEŃ+



MATERIALS:

- Duripanel cement-particle board
- Timber floor beams
- Insulation material mineral wool
- Floor finish (ceramic tiles, or parquet)
- Cement adhesive for ceramic cladding
- Cementex cement board
- Duripanel board screws, or steel staples
- Nida WP 60 loft hanger
- Nida CD 60 top main profile
- Nida sheet metal screws
- Nida Ogień Plus or Nida Ogień Kompakt plasterboard
- Nida wood screws
- Nida CD 60 bottom loadbearing profile
- Nida LK 60 cross connector
- Sealing tape for Nida acoustic insulation



THE SYSTEM OF FIRE PROTECTION FOR THE TIMBER FLOORS WITH FIRE EXPOSITION FROM THE BOTH SIDES (SURFACE FINISH - CERAMIC TILES, PARQUET)

TECHNICAL PARAMETERS

System type Nida Strop D	Floor load-bearing structure (timber beams)		Sheathing from the top side - Cement-particle board			Sheathing from the top side - Cement board (bonding layer)			Sheathing from the bottom side - plasterboard			Insulation material		Static parameters - conditioning		Mass of encasement ³⁾ [kg/m²]	Fire resistance class	Special system
	width - b [mm]	height - h [mm]	Name	Thickness [mm]	Density [kg/m³]	Name	Thickness [mm]	Density [kg/m³]	Name	Thickness [mm]	Density [kg/m³]	Thickness [mm]	Density [kg/m³]	Coefficient of effort $[\alpha_w]$	Cross-section modulus b/h			
G44/DPB1/C-D50/Ogień+	50 ÷ 79	50 ÷ 79	Duripanel B1	2 x 22	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	106,0	REI120	●
G38/DPA2/C-D50/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel A2	22 ÷ 16	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0 ÷ 0,25	102,3	REI120	●
G40/DPB1/C-D50/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel B1	40	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,6	1,0 ÷ 0,25	101,0	REI120	●
G32/DPA2/C-D50/Ogień+	60 ÷ 99	60 ÷ 99	Duripanel A2	32	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	equal to h - of beam	50,0	1,0 ÷ 0,8	1,0 ÷ 0,25	94,2	REI120	●
G56/DPB1/C-D60/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel B1	40 ÷ 16	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 15 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	124,0	REI120	●
G44/DPB1/C-D50/Ogień+	≥ 100	≥ 100	Duripanel B1	2 x 22	1250,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	- ⁴⁾	- ⁴⁾	1,0	1,0 ÷ 0,25	106,0	REI120	●
G48/DPA2/C-D60/Ogień+	60 ÷ 79	60 ÷ 79	Duripanel A2	32 ÷ 16	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 15 ²⁾	800,0	- ⁴⁾	- ⁴⁾	1,0 ÷ 0,6	1,0 ÷ 0,25	129,8	REI120	●
G40/DPA2/C-D50/Ogień+	≥ 100	≥ 100	Duripanel A2	22 ÷ 19	1350,0	Cementex	8	1387,0	Ogień Plus	4 x 12,5 ¹⁾	800,0	- ⁴⁾	- ⁴⁾	1,0	1,0 ÷ 0,25	106,4	REI120	●

- ¹⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 2x25 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).
²⁾ Optionally, a double-layer arrangement of the Nida Ogień Kompakt type DF 1x25 mm + Nida Ogień Plus type DF 1x12,5 mm boards should be utilised (it can lead to increased weight of the bottom sheathing).
³⁾ The weight does not include the mass of the timber floor load-bearing structure and the insulation material.
⁴⁾ Optional application - no requirements within the range of the fire resistance (any insulation material can be utilised).
 • Fixing of the Duripanel B1 and Duripanel A2 cement-particle boards in the crosswise arrangement with utilisation of screws for particle boards, or steel staples.
 • Fixing of the Nida plasterboards in the crosswise arrangement.
 • Minimal support distance for the cement-particle boards on a beam of the load-bearing structure in a min. distance 30 mm from the board edge.
 • The stated values of the minimal sheathing thickness refer to the fire resistance conditions. Verification based on the ITB technical assessment No. 01060/16/R112N2K, or static calculations, are always required with respect to the requirements within the range of statics (strength) with reference to the spacing of the structural timber ceiling joists.
 • The detailed guidelines are presented in the ITB work no. 01060/21/R163N2P.
 • The presented solutions are examples. For every individual case it is necessary to perform individual analysis in order to select the optimal solution.

CONSUMPTION OF MATERIALS PER 1M² OF THE FIRE-PROTECTED TIMBER FLOORS

Material name	UM	System type Nida Strop D														
		G44/DPB1/C-D50/Ogień+	G44/DPB1/C-D50/Kompakt	G38/DPA2/C-D50/Ogień+	G38/DPA2/C-D50/Kompakt	G40/DPB1/C-D50/Ogień+	G40/DPB1/C-D50/Kompakt	G32/DPA2/C-D50/Ogień+	G32/DPA2/C-D50/Kompakt	G56/DPB1/C-D60/Ogień+	G56/DPB1/C-D60/Kompakt	G44/DPB1/C-D50/Ogień+	G44/DPB1/C-D50/Kompakt	G48/DPA2/C-D60/Ogień+	G48/DPA2/C-D60/Kompakt	G40/DPA2/C-D50/Ogień+
Consumption of material per 1m²																
Duripanel B1 board 16 mm	m²	-	-	-	-	-	-	-	-	1,0	1,0	-	-	-	-	-
Duripanel A2 board 16 mm	m²	-	-	1,0	1,0	-	-	-	-	-	-	2,0	2,0	1,0	1,0	-
Duripanel B1 board 22 mm	m²	2,0	2,0	-	-	-	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 19 mm	m²	-	-	-	-	-	-	-	-	-	-	-	-	-	1,0	1,0
Duripanel B1 board 28 mm	m²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Duripanel A2 board 22 mm	m²	-	-	1,0	1,0	-	-	-	-	-	-	-	-	-	1,0	1,0
Duripanel B1 board 40 mm	m²	-	-	-	-	1,0	1,0	-	-	1,0	1,0	-	-	-	-	-
Duripanel A2 board 32 mm	m²	-	-	-	-	-	-	1,0	1,0	-	-	-	1,0	1,0	-	-
Cementex board 8 mm	m²	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Nida Ogień Plus 12,5 mm plasterboard	m²	4,0	-	4,0	-	4,0	-	4,0	-	-	-	4,0	-	-	4,0	-
Nida Ogień Plus 15 mm plasterboard	m²	-	-	-	-	-	-	-	-	4,0	-	-	-	4,0	-	-
Nida Ogień Kompakt 20 mm plasterboard	m²	-	-	-	-	-	-	-	-	-	3,0	-	-	-	3,0	-
Nida Ogień Kompakt 25 mm plasterboard	m²	-	2,0	-	2,0	-	2,0	-	2,0	-	1,0	-	2,0	-	-	2,0
Nida CD60 profile	lm	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
Nida UD27 profile	lm	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Nida WP60 loft hanger	pcs.	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Nida LW60 lengthwise connector	pcs.	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9
Nida LK60 cross connector	pcs.	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Wood screws 3.5x45 mm	pcs.	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Nida 3.5x25 mm sheet metal screws	pcs.	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0	-	6,0
Nida 3.5x35 mm sheet metal screws	pcs.	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Nida 3.5x45 mm sheet metal screws	pcs.	-	-	-	-	-	-	-	-	6,0	-	-	-	6,0	-	-
Nida 3.5x55 mm sheet metal screws	pcs.	6,0	-	6,0	-	6,0	-	6,0	-	6,0	6,0	6,0	-	6,0	6,0	18,0
Nida 4.2x70 mm sheet metal screws	pcs.	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
Anchoring element ⁵⁾	pcs.	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Fixing elements - galvanised steel staples or screws for particle boards	pcs.	20	20 ⁶⁾	20	20	20	20	20	20	20	20	20	20	20	20	20
Duripanel board screws	pcs.	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾
Nida reinforcement tape	lm	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Nida Start gypsum putty	kg	1,2	0,6	1,2	0,6	1,2	0,6	1,2	0,6	1,2	0,9	0,9	0,6	1,2	0,9	1,2
Nida Finish gypsum putty	kg	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Sealing tape for Nida acoustic insulation	lm	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Insulation material	m²	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾	1,0 ⁷⁾

- ⁵⁾ The type of the anchoring element should be selected individually for a given wall structure type.
⁶⁾ Optionally, it is possible to utilise galvanised steel staples.
⁷⁾ Application acc. to the requirements.
 The standards concerning the amount of utilised material do not cover the loss of the material.



fire protection for the Nida Strop D timber structure floors

Basing on the rich experience with respect to developing new passive fire protection solutions, Siniat company has introduced the Nida Strop D system, which is the most advanced fire protection system for timber floors. In reality it is the only system with such a wide range of applications in existence in Polish market, based on the innovative Duripanel B1 and Duripanel A2 cement cement-particle boards.

The Nida Strop D fire protection system for timber floors is a very universal solution, which covers a wide range of applications. It enables providing protection to all the types of timber structure floors taking into account the requirements of the direction of fire exposition (from the top, bottom, or from both the sides).

The properly compiled documentation (the fire classification compiled by the ITB) enables designing the protection system adjusted to an individual floor structure, owing to which we are able to select the most optimised protection system. Still, it requires determining a number of parameters within the range of statics, which should not

be a difficult task after communication with the constructor of a given building structure. From the point of view of performing the installation works, the Nida Strop D fire protection system for timber floors is the simplest solution available on the market. This claim is supported by the fact that the top side protective installation is based on the DURIPANEL cement-particle boards, which also act as load-bearing elements of floors.

The solutions made available by our competitors require utilisation of additional components of, e.g. wood based boards, such as OSB, or wooden boards, acting as load-bearing substrates. This considerably increases the cost of the system with respect to the utilised materials, and the required labour. The protection system from the bottom is constructed as standard ceiling encasements, which are not complicated, commonly used and based on the standard Nida Ogień Plus type DF fire protection boards.

The Nida Strop D protection system for timber floors constructed according to the technology developed by Siniat has the following technical parameters:

- The fire protection system ensures the fire resistance class REI30-REI120,
- Possibility of providing fire protection from the top side, from the bottom side, from both the sides (unique feature),
- Optimised selection process of the protective systems with respect to verification of the static parameters and the cross-section dimensions of the load-bearing elements,
- Increased mechanical resistance of the top encasement sheathing for floors of the unique Duripanel cement-particle boards.

The advantages of the Nida Strop D system

- Simple assembly of flooring (with utilisation of steel staples) and ceiling sheathing (standard suspended ceilings) depending on the requirements,
- No need for installation of a floor load-bearing sub-structure (e.g. OSB boards, or wooden boards) under the protective sheathing of the Duripanel cement-particle boards,
- Aesthetic appearance of the encasement.

What components are included in the Nida Strop D systems:

- The specialised Duripanel B1 or Duripanel A2 cement-particle boards (protection from the top side),

- The Nida Ogień Plus type DF fire protection gypsum plasterboards (protection from the bottom side),
- The Nida CD60 and UD 27 ceiling steel structure when the bottom protection structure is fixed with appropriate spacing from the load-bearing ceiling joists,

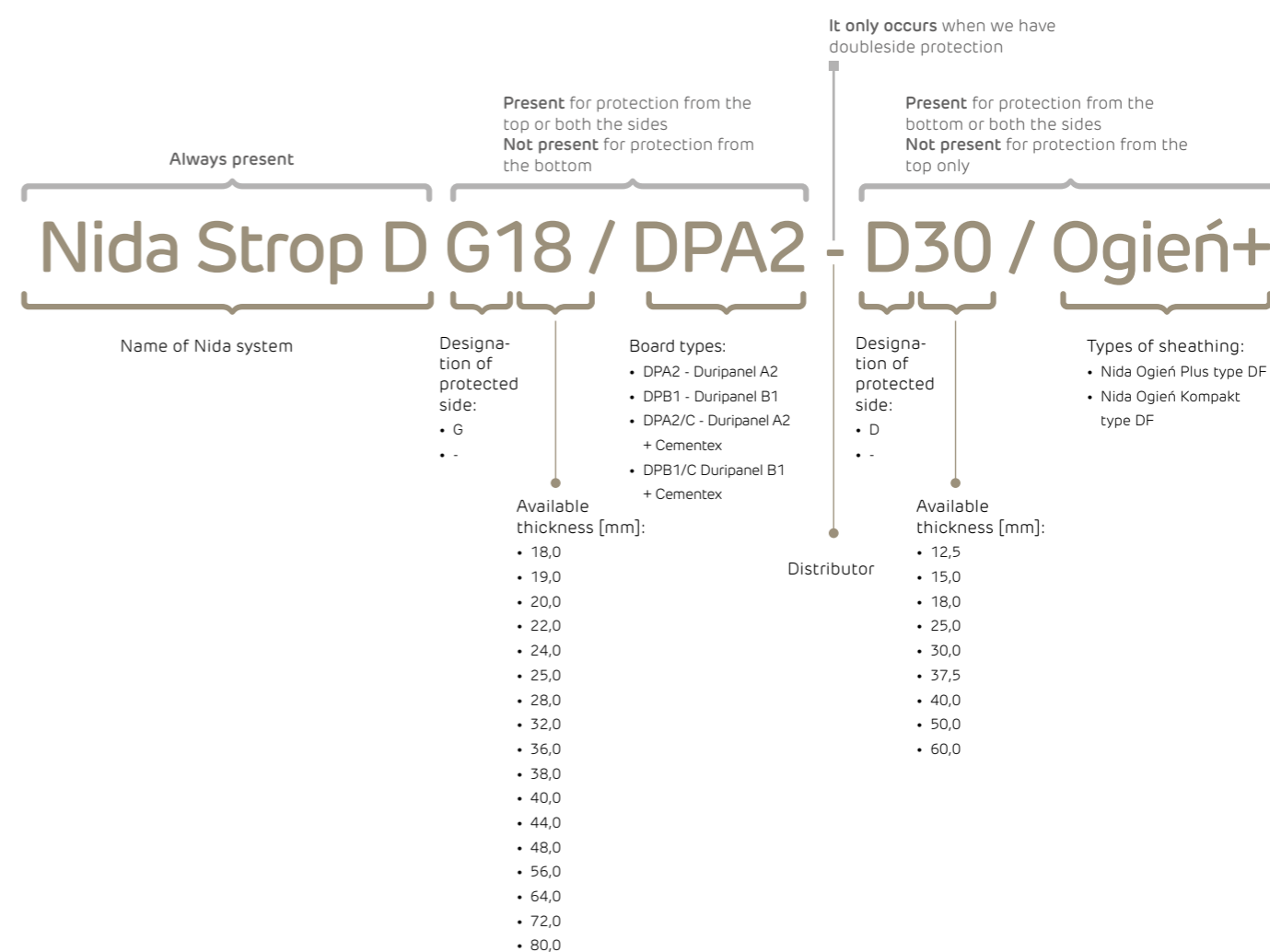
- System fixing elements (sheet metal screws, staples),
- The professional Nida Start, Nida Finish joint fillers,
- The Nida system assembly accessories (e.g.: elements of suspended ceilings)

Designations of the protection encasements for timber load-bearing structures

In order to facilitate deciphering and identification of the individual system solutions we are presenting marking examples with detailed descriptions of their individual elements.

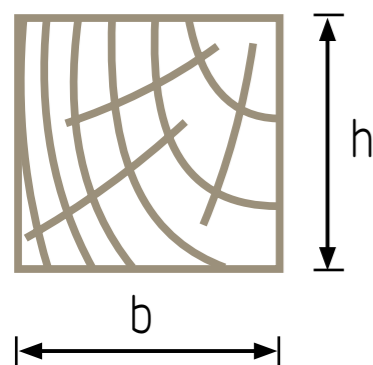
Examples:

1. Double sided protection → Nida Strop D G18/DPA2-D30/Ogień+
2. Protection from the top side → Nida Strop D G18/DPA2
3. Protection from the bottom side → Nida Strop D D30/Ogień+



the required thickness of the protective layer from the bottom - fire exposition from the bottom side of the floor

The tables marked 1.1 ÷ 4.3 present the required thickness of the timber floor protective layer determined both with utilisation of calculations and based on the results of the performed tests [2.11-2.16], depending on the geometric, mechanical and design parameters utilised during the fire resistance evaluation process, such as:



b, h – the width and height of the timber element cross-section,

α_M – the load-bearing capacity utilisation index for bending (the coefficient of effort for bending) refers to the cross-section and it is

determined for the designed values of the internal forces and strength in the normal conditions.

The presented sheathing thickness values not only refer to meeting the fire resistance requirements. The static calculations are always required in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. The ITB work no. 01060/16/R112NZK proves helpful in this respect.

For the floor structures designated as VERSION A, the space between the beams should be tightly filled with mineral wool. Additionally, the mineral wool should be protected against falling out in the case of failure of the bottom sheathing layers.

When there are concerns that the floor insulating material is not (will not be) secured against falling out before a fire ends, it is necessary

to provide the minimal required thickness of fire protection of plasterboards, just like in the case of the version without any insulation (VERSION B).

Application of the fire protection system with utilisation of the Nida Ogień Plus or Nida Ogień Kompakt with the thickness as presented in the tables 1.1 ÷ 4.3 enables skipping any additional fire protection from the top side of the floor, on the condition, that:

- the floor joists must be secured against loss of stability with utilisation of, e.g., wedges,
- for the floors filled with mineral rock wool (VERSION A), the thickness of the filling must not be lower than the height of the ceiling joists.

Table 1.1 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=1.0$ – fire exposition from the bottom side.

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³			
40	15	12,5	12,5
≥50	12,5	12,5	12,5
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	25	18	18
≥50	18	18	18

Table 1.2 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=0.8$ – fire exposition from the bottom side.

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³			
40	12,5	12,5	12,5
≥50	12,5	12,5	12,5
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	18	18	18
≥50	18	18	18

Table 1.3 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=0.6$ – fire exposition from the bottom side.

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³			
40	12,5	12,5	12,5
≥50	12,5	12,5	12,5
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	18	18	18
≥50	18	18	18

Table 2.1 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=1.0$ – fire exposition from the bottom side.

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³			
40	30	25	25
≥50	25	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	30	30	30
≥50	30	30	30

Table 2.2 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=0.8$ – **fire exposition from the bottom side.**

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
REI 60¹⁾			
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³			
40	25	25	25
≥50	25	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	30	30	30
≥50	30	30	30

Table 2.3 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=0.6$ – **fire exposition from the bottom side.**

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
REI 60¹⁾			
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³			
40	25	25	15
≥50	25	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	30	30	30
≥50	30	30	30

Table 3.1 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=1.0$ – **fire exposition from the bottom side.**

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
REI 90¹⁾			
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³			
40	50	37,5	30
50	37,5	37,5	30
60	37,5	30	25
80	37,5	25	25
100	30	25	25
≥120	25	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	50	50	50
50	50	50	50
60	50	50	50
80	50	40	40
100	40	40	40
≥120	40	40	40

Table 3.2 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=0.8$ – **fire exposition from the bottom side.**

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
REI 90¹⁾			
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³			
40	37,5	37,5	30
50	37,5	37,5	30
60	37,5	30	25
80	37,5	25	25
100	30	25	25
≥120	25	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	50	50	50
50	50	50	50
60	50	40	40
80	40	40	40
100	40	40	40
≥120	40	40	40

Table 3.3 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=0.6$ – **fire exposition from the bottom side.**

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
REI 90¹⁾			
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³			
40	37,5	37,5	30
50	37,5	30	25
60	37,5	30	25
80	30	25	25
100	25	25	25
≥120	25	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	50	50	50
50	50	50	40
60	50	40	40
80	40	40	40
100	40	40	40
≥120	40	40	40

Table 4.1 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=1.0$ – **fire exposition from the bottom side.**

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³			
40	60	50	50
50	50	50	50
60	50	50	50
80	50	37,5	30
100	50	37,5	25
120	50	37,5	25
140	37,5	30	25
160	37,5	30	25
180	37,5	25	25
≥200	37,5	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	60	60	60
50	60	60	60
60	60	60	60
80	60	50	50
100	50	50	50
120	50	50	50
140	50	50	50
160	50	50	50
180	50	50	50
≥200	50	50	50

REI 120¹⁾

Table 4.3 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=0.6$ – **fire exposition from the bottom side.**

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³			
40	50	50	50
50	50	50	50
60	50	37,5	37,5
80	50	37,5	25
100	50	37,5	25
120	37,5	30	25
140	37,5	25	25
160	37,5	25	25
180	37,5	25	25
≥200	30	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	60	60	60
50	60	60	60
60	60	50	50
80	50	50	50
100	50	50	50
120	50	50	50
140	50	50	50
160	50	50	50
180	50	50	50
≥200	50	50	50

REI 120¹⁾

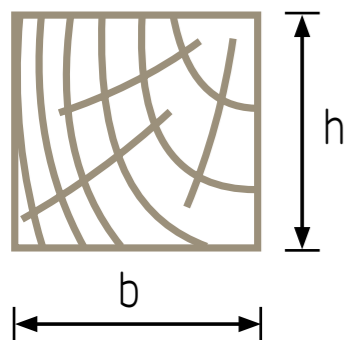
Table 4.1 The required thickness of the protective layer of the Nida Ogień Plus or Nida Ogień Kompakt boards from the bottom for the coefficient of effort $\alpha_M=0.8$ – **fire exposition from the bottom side.**

b [mm]	Cross-section modulus b/h		
	1	0,5	0,25
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³			
40	60	50	50
50	50	50	50
60	50	37,5	50
80	50	37,5	30
100	50	37,5	25
120	37,5	37,5	25
140	37,5	30	25
160	37,5	25	25
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)			
40	60	60	60
50	60	60	60
60	60	60	50
80	50	50	50
100	50	50	50
120	50	50	50
140	50	50	50
160	50	50	50
180	50	50	50
≥200	50	50	50

REI 120¹⁾

the required thickness of the protective layer from the top - fire exposition from the top side of the floor

The tables 5 ÷ 8.3 present the required values (based on the obtained test results [2.17] and the available technical knowledge and experience of the ITB Fire Research Department concerning the characteristics of the cement-particle and cement-fibre boards) the thickness of the protection layer for timber floors, depending on the geometric, mechanic and design parameters utilised during the fire resistance assessment process, such as:



b, h – the width and height of the timber element cross-section,

α_M – the load-bearing capacity utilisation index for bending (the coefficient of effort for bending) which refers to the cross-section and it is determined for the internal design forces and strength in normal conditions.

The tables 5 ÷ 8.3 present the various types of sheathing which are acceptable for utilisation in order to meet the requirements of the individual fire resistance classes. It means that the presented versions are alternatives – they can be applied interchangeably.

The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or follow the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists.

For the floors with the spaces between the individual beams filled with mineral wool it is important to ensure that the spaces are tightly filled with the insulation. Moreover, mineral wool should be protected against falling out. When it is suspected that the insulating material of the floor is not (might not be) secured against falling throughout the duration of a fire, the spaces are not (might not be) filled tightly

and insulation does not cover the full height of the ceiling joist, it is necessary to apply the required thickness of the protective layer, as for the version without any filling (VERSION B).

The applied thickness of the fire protection layer constructed of the Duripanel A2 (DPA2), Duripanel B1(DPB1), Duripanel A2 and Cementex (DPA2/C) or Duripanel B1 and Cementex (DPB1/C) boards, as presented in the Tables 5 ÷ 8.3, enables omitting any additional fire protection from the bottom side on the condition that:

- the floor joists are secured against loss of stability with utilisation of, e.g., wedges,
- for the floors filled with mineral rock wool (VERSION A), the thickness of the filling is not lower than the height of the ceiling joists.
- the conditions presented under the individual tables state otherwise.

Table 5 The required thickness of the protective layer of the floor from the top for the coefficient of effort $\alpha_M=0.6$, $\alpha_M=0.8$ and $\alpha_M=1.0$ – fire exposition from the top side

b [mm]	Cross-section modulus b/h												
	1				0,5				0,25				
	Fire protection sheathing type ¹⁾												
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	
REI 30	VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³												
	40÷200	19	18	19	18	19	18	19	18	19	18	19	18
	≥200	19	18	19	18	19	18	19	18	19	18	19	18
REI 30	VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
	40÷200	22 ^{3)/19²⁾}	20/18 ²⁾	19	18	22 ^{3)/19²⁾}	20/18 ²⁾	19	18	22 ^{3)/19²⁾}	20/18 ²⁾	19	18
	≥200	22 ^{3)/19²⁾}	20/18 ²⁾	19	18	22 ^{3)/19²⁾}	20/18 ²⁾	19	18	22 ^{3)/19²⁾}	20/18 ²⁾	19	18

Notes:

¹⁾ Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.

²⁾ It is possible to apply the minimal sheathing thickness when:

- first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only),
- second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.

³⁾ Alternatively, instead of 1 layer of 22 mm thick board it is possible to apply a two-layered arrangement of the Duripanel A2 boards, thickness 2 x 10 mm.

Important:

The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

Table 6.1 The required thickness of the protective layer of the floor from the top for the coefficient of effort $\alpha_M=1.0$ – fire exposition from the top side

b [mm]	Cross-section modulus b/h												
	1				0,5				0,25				
	Fire protection sheathing type ¹⁾												
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	
REI 60	VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³												
	40	32/28 ²⁾	32	19	22	22/19 ²⁾	22/18 ²⁾	19	18	19	18	19	18
	50	28/22 ²⁾	28/24 ²⁾	19	18	19	18	19	18	19	18	19	18
	60	25/19 ²⁾	28/22 ²⁾	19	18	19	18	19	18	19	18	19	18
	80	22/19 ²⁾	22/18 ²⁾	19	18	19	18	19	18	19	18	19	18
	≥100	19	18	19	18	19	18	19	18	19	18	19	18
REI 60	VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
	40	38/28 ³⁾	40/32 ³⁾	22	24	38/28 ³⁾	40/32 ³⁾	22	24	38/28 ³⁾	40/32 ³⁾	22	24
	50	38/28 ³⁾	40/32 ³⁾	22	24	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22
	60	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾
	80	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾	38/25 ³⁾	40/24 ³⁾	22/19 ³⁾	22/18 ³⁾	38/22 ³⁾	40/24 ³⁾	22/19 ³⁾	22/18 ³⁾
	100	38/22 ³⁾	40/24 ³⁾	22/19 ³⁾	22/18 ³⁾	38/22 ³⁾	40/22 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/20 ³⁾	22/19 ³⁾	22/18 ³⁾
	120	38/19 ³⁾	40/22 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/20 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾
	140	38/19 ³⁾	40/20 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾
	≥160	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾

Notes:

¹⁾ Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.

²⁾ It is possible to apply the minimal sheathing thickness when:

- first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only),
- second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.

³⁾ It is possible to apply the minimal sheathing thickness when:

- first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
- second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, thickness acc. to the following key:
 - for the DPA2 lub DPB1 gr. 32 mm, DPA2/C gr. 19 mm lub DPB1/C gr. 18 mm: min. 12,5 mm
 - for the DPA2 lub DPB1 gr. 28 mm: min. 15 mm
 - for the DPA2 gr. 19, 22, 25 mm lub DPB1 gr. 18, 20, 22, 24 mm: min. 25 mm

Important:

The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

Table 6.2 The required thickness of the protective layer of the floor from the top side for the coefficient of effort $\alpha_M=0.8$ – fire exposition from the top.

b [mm]	Cross-section modulus b/h											
	1				0,5				0,25			
	Fire protection sheathing type ¹⁾											
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C
REI 60												
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³												
40	32/25 ²⁾	32/28 ²⁾	19	20	22/19 ²⁾	22/18 ²⁾	19	18	19	18	19	18
50	28/22 ²⁾	28/24 ²⁾	19	18	19	18	19	18	19	18	19	18
60	25/19 ²⁾	28/22 ²⁾	19	18	19	18	19	18	19	18	19	18
80	22/19 ²⁾	22/18 ²⁾	19	18	19	18	19	18	19	18	19	18
≥100	19	18	19	18	19	18	19	18	19	18	19	18
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
40	38/28 ³⁾	40/32 ³⁾	22	24	38/28 ³⁾	40/32 ³⁾	22	24	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22
50	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾
60	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾
80	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾	38/22 ³⁾	40/24 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/22 ³⁾	22/19 ³⁾	22/18 ³⁾
100	38/19 ³⁾	40/22 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/20 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾
120	38/19 ³⁾	40/20 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾
≥140	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾

Table 6.3 The required thickness of the protective layer of the floor from the top side for the coefficient of effort $\alpha_M=0.6$ – fire exposition from the top.

b [mm]	Cross-section modulus b/h											
	1				0,5				0,25			
	Fire protection sheathing type ¹⁾											
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C
REI 60												
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 26 kg/m ³												
40	32/22 ²⁾	32/24 ²⁾	19	18	22/19 ²⁾	22/18 ²⁾	19	18	19	18	19	18
50	28/19 ²⁾	28/22 ²⁾	19	18	19	18	19	18	19	18	19	18
60	25/19 ²⁾	28/18 ²⁾	19	18	19	18	19	18	19	18	19	18
80	22/19 ²⁾	22/18 ²⁾	19	18	19	18	19	18	19	18	19	18
≥100	19	18	19	18	19	18	19	18	19	18	19	18
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
40	38/28 ³⁾	40/32 ³⁾	22	24	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22
50	38/28 ³⁾	40/32 ³⁾	22/19 ³⁾	22	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾
60	38/25 ³⁾	40/28 ³⁾	22/19 ³⁾	22/20 ³⁾	38/22 ³⁾	40/24 ³⁾	22/19 ³⁾	22/18 ³⁾	38/22 ³⁾	40/24 ³⁾	22/19 ³⁾	22/18 ³⁾
80	38/22 ³⁾	40/24 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/22 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/20 ³⁾	22/19 ³⁾	22/18 ³⁾
100	38/19 ³⁾	40/20 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾
120	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾
≥140	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾	38/19 ³⁾	40/18 ³⁾	22/19 ³⁾	22/18 ³⁾

- Notes:**
- ¹⁾ Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.
 - ²⁾ It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.
 - ³⁾ It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, thickness acc. to the following key:
 - for the DPA2 lub DPB1 gr. 32 mm, DPA2/C gr. 19 mm lub DPB1/C gr. 18 mm: min. 12,5 mm
 - for the DPA2 lub DPB1 gr. 28 mm: min. 15 mm
 - for the DPA2 gr. 19, 22, 25 mm lub DPB1 gr. 18, 20, 22, 24 mm: min. 25 mm

Important:
The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

Table 7.1 The required thickness of the protective layer of the floor from the top side for the coefficient of effort $\alpha_M=1.0$ – fire exposition from the top.

b [mm]	Cross-section modulus b/h											
	1				0,5				0,25			
	Fire protection sheathing type ¹⁾											
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C
REI 90												
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³												
40	44/40 ²⁾	48/40 ²⁾	32	36	36/28 ²⁾	36/32 ²⁾	22	24	224/19 ²⁾	20/18 ²⁾	19	18
50	44/32 ²⁾	48/40 ²⁾	28	32	32/25 ²⁾	32/28 ²⁾	19	20	19	18	19	18
60	40/32 ²⁾	40/36 ²⁾	28	32	28/19 ²⁾	28/22 ²⁾	19	18	19	18	19	18
80	36/28 ²⁾	36/32 ²⁾	22	24	224/19 ²⁾	20/18 ²⁾	19	18	19	18	19	18
100	32/25 ²⁾	32/28 ²⁾	19	20	19	18	19	18	19	18	19	18
120	28/19 ²⁾	28/22 ²⁾	19	18	19	18	19	18	19	18	19	18
140	28/19 ²⁾	28/18 ²⁾	19	18	19	18	19	18	19	18	19	18
160	224/19 ²⁾	20/18 ²⁾	19	18	19	18	19	18	19	18	19	18
≥180	19	18	19	18	19	18	19	18	19	18	19	18
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40 ³⁾
50	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾
60	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾
80	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/32 ³⁾	64/44 ³⁾	36/28 ³⁾	40/32 ³⁾	56/32 ³⁾	64/44 ³⁾	36/28 ³⁾	40/32 ³⁾
100	56/32 ³⁾	64/40 ³⁾	36/28 ³⁾	40/32 ³⁾	56/32 ³⁾	64/40 ³⁾	36/28 ³⁾	40/32 ³⁾	56/32 ³⁾	64/40 ³⁾	36/25 ³⁾	40/28 ³⁾
120	56/32 ³⁾	64/36 ³⁾	36/28 ³⁾	40/32 ³⁾	56/32 ³⁾	64/36 ³⁾	36/25 ³⁾	40/28 ³⁾	56/28 ³⁾	64/36 ³⁾	36/22 ³⁾	40/24 ³⁾
140	56/32 ³⁾	64/36 ³⁾	36/25 ³⁾	40/28 ³⁾	56/28 ³⁾	64/32 ³⁾	36/19 ³⁾	40/22 ³⁾	56/25 ³⁾	64/32 ³⁾	36/19 ³⁾	40/20 ³⁾
160	56/28 ³⁾	64/32 ³⁾	36/22 ³⁾	40/24 ³⁾	56/25 ³⁾	64/28 ³⁾	36/19 ³⁾	40/20 ³⁾	56/22 ³⁾	64/28 ³⁾	36/19 ³⁾	40/18 ³⁾
180	56/28 ³⁾	64/32 ³⁾	36/19 ³⁾	40/22 ³⁾	56/22 ³⁾	64/24 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/24 ³⁾	36/19 ³⁾	40/18 ³⁾
≥200	56/25 ³⁾	64/28 ³⁾	36/19 ³⁾	40/20 ³⁾	56/19 ³⁾	64/20 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾

- Notes:**
- ¹⁾ Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.
 - ²⁾ It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.
 - ³⁾ It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, thickness acc. to the following key:
 - for the DPA2 lub DPB1 gr. 32 mm, DPA2/C gr. 19 mm lub DPB1/C gr. 18 mm: min. 12,5 mm
 - for the DPA2 lub DPB1 gr. 28 mm: min. 15,0 mm
 - for the DPA2 gr. 19, 22, 25 mm lub DPB1 gr. 18, 20, 22, 24 mm: min. 25,0 mm

Important:
The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

Table 7.2 The required thickness of the protective layer of the floor from the top side for the coefficient of effort $\alpha_M = 0.8$ – fire exposition from the top.

b [mm]	Cross-section modulus b/h											
	1				0,5				0,25			
	Fire protection sheathing type ¹⁾											
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C
REI 90												
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³												
40	44/40 ²⁾	48/40 ²⁾	32	36	36/28 ²⁾	36/32 ²⁾	22	24	22 ⁴⁾ /19 ²⁾	20/18 ²⁾	19	18
50	44/32 ²⁾	48/40 ²⁾	28	32	32/22 ²⁾	32/28 ²⁾	19	20	19	18	19	18
60	40/32 ²⁾	40/36 ²⁾	28	32	28/19 ²⁾	28/22 ²⁾	19	18	19	18	19	18
80	36/28 ²⁾	36/32 ²⁾	19	22	22 ⁴⁾ /19 ²⁾	20/18 ²⁾	19	18	19	18	19	18
100	32/22 ²⁾	32/24 ²⁾	19	18	19	18	19	18	19	18	19	18
120	28/19 ²⁾	28/18 ²⁾	19	18	19	18	19	18	19	18	19	18
140	28/19 ²⁾	28/18 ²⁾	19	18	19	18	19	18	19	18	19	18
160	22 ⁴⁾ /19 ²⁾	20/18 ²⁾	19	18	19	18	19	18	19	18	19	18
≥180	19	18	19	18	19	18	19	18	19	18	19	18
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾
50	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾
60	56/36 ³⁾	64/40 ³⁾	36/32 ³⁾	40/36 ³⁾	56/36 ³⁾	64/40 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾
80	56/32 ³⁾	64/40 ³⁾	36/32 ³⁾	40/36 ³⁾	56/32 ³⁾	64/40 ³⁾	36/28 ³⁾	40/32 ³⁾	56/32 ³⁾	64/36 ³⁾	36/28 ³⁾	40/32 ³⁾
100	56/32 ³⁾	64/36 ³⁾	36/28 ³⁾	40/32 ³⁾	56/32 ³⁾	64/36 ³⁾	36/25 ³⁾	40/28 ³⁾	56/28 ³⁾	64/32 ³⁾	36/22 ³⁾	40/24 ³⁾
120	56/32 ³⁾	64/36 ³⁾	36/25 ³⁾	40/28 ³⁾	56/28 ³⁾	64/32 ³⁾	36/19 ³⁾	40/22 ³⁾	56/28 ³⁾	64/32 ³⁾	36/19 ³⁾	40/22 ³⁾
140	56/28 ³⁾	64/32 ³⁾	36/22 ³⁾	40/24 ³⁾	56/25 ³⁾	64/28 ³⁾	36/19 ³⁾	40/20 ³⁾	56/22 ³⁾	64/24 ³⁾	36/19 ³⁾	40/18 ³⁾
160	56/28 ³⁾	64/32 ³⁾	36/19 ³⁾	40/22 ³⁾	56/19 ³⁾	64/22 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/20 ³⁾	36/19 ³⁾	40/18 ³⁾
180	56/22 ³⁾	64/24 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/20 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾
≥200	56/19 ³⁾	64/22 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾

- Notes:**
- 1) Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.
 - 2) It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.
 - 3) It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, thickness acc. to the following key:
 - for the DPA2/C gr. 32 mm, DPB1/C gr. 36 mm: min. 12,5 mm
 - for the DPA2 gr. 38 mm, DPB1 gr. 40 mm, 44 mm, DPA2/C gr. 19 mm, 22 mm, 25 mm, 28 mm, DPB1/C gr. 18 mm, 20 mm, 24 mm, 28 mm, 32 mm: min. 25,0 mm
 - for the DPA2 gr. 22 mm, 25 mm, 28 mm, 32 mm, 36 mm, DPB1 gr. 18 mm, 20 mm, 24 mm, 28 mm, 32 mm, 36 mm: min. 30,0 mm
 - for the DPA2 gr. 19 mm, DPB1 gr. 18 mm: min. 37,5 mm
 - 4) Alternatively, instead of 1 layer of 22 mm thick board it is possible to apply a two-layered arrangement of the Duripanel A2 boards, thickness 2 x 10 mm.

Important:
The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

Table 7.3 The required thickness of the protective layer of the floor from the top side for the coefficient of effort $\alpha_M = 0.6$ – fire exposition from the top.

b [mm]	Cross-section modulus b/h											
	1				0,5				0,25			
	Fire protection sheathing type ¹⁾											
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C
REI 90												
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³												
40	44/32 ²⁾	48/40 ²⁾	28	32	36/25 ²⁾	36/28 ²⁾	19	20	22 ⁴⁾ /19 ²⁾	20/18 ²⁾	19	18
50	44/32 ²⁾	48/36 ²⁾	28	32	32/19 ²⁾	32/20 ²⁾	19	18	19	18	19	18
60	40/28 ²⁾	40/32 ²⁾	22	24	28/19 ²⁾	28/18 ²⁾	19	18	19	18	19	18
80	36/25 ²⁾	36/28 ²⁾	19	20	22 ⁴⁾ /19 ²⁾	20/18 ²⁾	19	18	19	18	19	18
100	32/19 ²⁾	32/20 ²⁾	19	18	19	18	19	18	19	18	19	18
120	28/19 ²⁾	28/18 ²⁾	19	18	19	18	19	18	19	18	19	18
140	28/19 ²⁾	28/18 ²⁾	19	18	19	18	19	18	19	18	19	18
160	22 ⁴⁾ /19 ²⁾	20/18 ²⁾	19	18	19	18	19	18	19	18	19	18
≥180	19	18	19	18	19	18	19	18	19	18	19	18
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾
50	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/38 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾
60	56/36 ³⁾	64/44 ³⁾	36/32 ³⁾	40/36 ³⁾	56/32 ³⁾	64/40 ³⁾	36/28 ³⁾	40/32 ³⁾	56/32 ³⁾	64/40 ³⁾	36/28 ³⁾	40/32 ³⁾
80	56/32 ³⁾	64/40 ³⁾	36/28 ³⁾	40/36 ³⁾	56/32 ³⁾	64/36 ³⁾	36/28 ³⁾	40/32 ³⁾	56/32 ³⁾	64/36 ³⁾	36/25 ³⁾	40/28 ³⁾
100	56/32 ³⁾	64/36 ³⁾	36/25 ³⁾	40/32 ³⁾	56/28 ³⁾	64/32 ³⁾	36/22 ³⁾	40/24 ³⁾	56/28 ³⁾	64/32 ³⁾	36/19 ³⁾	40/22 ³⁾
120	56/28 ³⁾	64/32 ³⁾	36/22 ³⁾	40/32 ³⁾	56/25 ³⁾	64/28 ³⁾	36/19 ³⁾	40/20 ³⁾	56/22 ³⁾	64/24 ³⁾	36/19 ³⁾	40/18 ³⁾
140	56/25 ³⁾	64/28 ³⁾	36/19 ³⁾	40/28 ³⁾	56/19 ³⁾	64/22 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/22 ³⁾	36/19 ³⁾	40/18 ³⁾
160	56/22 ³⁾	64/24 ³⁾	36/19 ³⁾	40/24 ³⁾	56/19 ³⁾	64/20 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾
180	56/19 ³⁾	64/20 ³⁾	36/19 ³⁾	40/22 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾
≥200	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/20 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾	56/19 ³⁾	64/18 ³⁾	36/19 ³⁾	40/18 ³⁾

- Notes:**
- 1) Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.
 - 2) It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.
 - 3) It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, thickness acc. to the following key:
 - for the DPA2/C gr. 32 mm, DPB1/C gr. 36 mm: min. 12,5 mm
 - for the DPA2 gr. 38 mm, DPB1 gr. 40 mm, 44 mm, DPA2/C gr. 19 mm, 22 mm, 25 mm, 28 mm, DPB1/C gr. 18 mm, 20 mm, 24 mm, 28 mm, 32 mm: min. 25,0 mm
 - for the DPA2 gr. 22 mm, 25 mm, 28 mm, 32 mm, 36 mm, DPB1 gr. 18 mm, 20 mm, 24 mm, 28 mm, 32 mm, 36 mm: min. 30,0 mm
 - for the DPA2 gr. 19 mm, DPB1 gr. 18 mm: min. 37,5 mm
 - 4) Alternatively, instead of 1 layer of 22 mm thick board it is possible to apply a two-layered arrangement of the Duripanel A2 boards, thickness 2 x 10 mm.

Important:
The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

Table 8.1 The required thickness of the protective layer of the floor from the top side for the coefficient of effort $\alpha_M=1.0$ – **fire exposition from the top.**

b [mm]	Cross-section modulus b/h											
	1				0,5				0,25			
	Fire protection sheathing type ¹⁾											
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C
REI 120												
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³												
40	NA/50 ²⁾	72/64 ²⁾	44	48	56/40 ²⁾	64/48 ²⁾	36/32 ²⁾	38	38/25 ²⁾	32/28 ²⁾	19	20
50	64/50 ²⁾	72/64 ²⁾	44/40 ²⁾	44	44/36 ²⁾	56/40 ²⁾	32	36	25/19 ²⁾	24/18 ²⁾	19	18
60	64/44 ²⁾	64/56 ²⁾	40/38 ²⁾	44/40 ²⁾	44/32 ²⁾	48/36 ²⁾	28	32	19	18	19	18
80	56/40 ²⁾	64/48 ²⁾	36/32 ²⁾	38	38/25 ²⁾	44/28 ²⁾	19	20	19	18	19	18
100	44/38 ²⁾	56/40 ²⁾	32	36	25/19 ²⁾	25/18 ²⁾	19	18	19	18	19	18
120	44/32 ²⁾	48/36 ²⁾	28	32	19	18	19	18	19	18	19	18
140	44/28 ²⁾	44/32 ²⁾	22	24	19	18	19	18	19	18	19	18
160	38/25 ²⁾	36/28 ²⁾	19	20	19	18	19	18	19	18	19	18
180	32/19 ²⁾	32/22 ²⁾	19	18	19	18	19	18	19	18	19	18
≥200	25/19 ²⁾	24/18 ²⁾	19	18	19	18	19	18	19	18	19	18
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
40	NA/50 ³⁾	80/72 ³⁾	56	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾
50	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/48 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/48 ³⁾	64/56 ³⁾
60	NA/50 ³⁾	80/72 ³⁾	56/48 ³⁾	64/56 ³⁾	NA/48 ³⁾	80/64 ³⁾	56/44 ³⁾	64/56 ³⁾	NA/48 ³⁾	80/64 ³⁾	56/44 ³⁾	64/48 ³⁾
80	NA/48 ³⁾	80/64 ³⁾	56/44 ³⁾	64/48 ³⁾	NA/48 ³⁾	80/64 ³⁾	56/40 ³⁾	64/48 ³⁾	NA/44 ³⁾	80/64 ³⁾	56/38 ³⁾	64/48 ³⁾
100	NA/48 ³⁾	80/64 ³⁾	56/40 ³⁾	64/44 ³⁾	NA/44 ³⁾	80/56 ³⁾	56/38 ³⁾	64/44 ³⁾	NA/40 ³⁾	80/56 ³⁾	56/36 ³⁾	64/40 ³⁾
120	NA/44 ³⁾	80/56 ³⁾	56/38 ³⁾	64/40 ³⁾	NA/40 ³⁾	80/48 ³⁾	56/36 ³⁾	64/40 ³⁾	NA/40 ³⁾	80/44 ³⁾	56/32 ³⁾	64/40 ³⁾
140	NA/44 ³⁾	80/50 ³⁾	56/36 ³⁾	64/40 ³⁾	NA/38 ³⁾	80/44 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/38 ³⁾	80/44 ³⁾	56/32 ³⁾	64/36 ³⁾
160	NA/40 ³⁾	80/48 ³⁾	56/32 ³⁾	64/38 ³⁾	NA/36 ³⁾	80/40 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/32 ³⁾	80/40 ³⁾	56/28 ³⁾	64/32 ³⁾
180	NA/38 ³⁾	80/44 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/32 ³⁾	80/40 ³⁾	56/28 ³⁾	64/32 ³⁾	NA/32 ³⁾	80/36 ³⁾	56/25 ³⁾	64/28 ³⁾
≥200	NA/32 ³⁾	80/40 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/32 ³⁾	80/36 ³⁾	56/25 ³⁾	64/28 ³⁾	NA/28 ³⁾	80/32 ³⁾	56/22 ³⁾	64/24 ³⁾

- Notes:**
- 1) Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.
 - 2) It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.
 - 3) It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - NA – no possibility of protection with utilisation of DPA2 for the determined maximum thickness 64 mm
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, thickness acc. to the following key:
 - for the DPB1 gr. 72 mm, DPA2/C gr. 50 mm, DPB1/C gr. 56 mm: min. 12,5 mm
 - for the DPA2 gr. 50 mm, DPB1 gr. 56 mm, 64 mm, DPA2/C gr. 32 mm, 36 mm, 40 mm, 44 mm, 48 mm, DPB1/C gr. 36 mm, 38 mm, 40 mm, 44 mm, 48 mm, 50 mm: min. 25,0 mm
 - for the DPA2 gr. 44 mm, 48 mm, DPB1 gr. 44 mm, 48 mm, 50 mm, DPA2/C gr. 25 mm, 28 mm, DPB1/C gr. 24 mm, 28 mm: min. 37,5 mm
 - for the DPA2 gr. 28 mm, 32 mm, 36mm, 38 mm, 40 mm, DPB1 gr. 32 mm, 36 mm, 40 mm, DPA2/C gr. 22 mm: min. 50,0 mm

Important:
 The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

Table 8.2 The required thickness of the protective layer of the floor from the top side for the coefficient of effort $\alpha_M=0.8$ – **fire exposition from the top.**

b [mm]	Cross-section modulus b/h											
	1				0,5				0,25			
	Fire protection sheathing type ¹⁾											
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C
REI 120												
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³												
40	NA/50 ²⁾	72/64 ²⁾	44	48	56/40 ²⁾	64/48 ²⁾	36/32 ²⁾	36	38/19 ²⁾	32/22 ²⁾	19	18
50	64/50 ²⁾	72/64 ²⁾	44/40 ²⁾	44	44/32 ²⁾	56/40 ²⁾	28	32	19	18	19	18
60	64/44 ²⁾	64/56 ²⁾	40/38 ²⁾	44/40 ²⁾	44/28 ²⁾	48/32 ²⁾	22	24	19	18	19	18
80	56/40 ²⁾	64/48 ²⁾	36/32 ²⁾	36	38/19 ²⁾	44/22 ²⁾	19	18	19	18	19	18
100	44/32 ²⁾	56/40 ²⁾	28	32	25/19 ²⁾	25/18 ²⁾	19	18	19	18	19	18
120	44/28 ²⁾	48/36 ²⁾	22	25	19	18	19	18	19	18	19	18
140	44/25 ²⁾	44/28 ²⁾	19	20	19	18	19	18	19	18	19	18
160	38/19 ²⁾	36/22 ²⁾	19	18	19	18	19	18	19	18	19	18
180	32/19 ²⁾	32/18 ²⁾	19	18	19	18	19	18	19	18	19	18
≥200	25/19 ²⁾	24/18 ²⁾	19	18	19	18	19	18	19	18	19	18
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
40	NA/50 ³⁾	80/72 ³⁾	56	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾
50	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/48 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/48 ³⁾	64/56 ³⁾
60	NA/50 ³⁾	80/72 ³⁾	56/48 ³⁾	64/56 ³⁾	NA/48 ³⁾	80/64 ³⁾	56/44 ³⁾	64/56 ³⁾	NA/48 ³⁾	80/64 ³⁾	56/44 ³⁾	64/48 ³⁾
80	NA/48 ³⁾	80/64 ³⁾	56/40 ³⁾	64/44 ³⁾	NA/44 ³⁾	80/56 ³⁾	56/38 ³⁾	64/44 ³⁾	NA/44 ³⁾	80/56 ³⁾	56/38 ³⁾	64/40 ³⁾
100	NA/48 ³⁾	80/64 ³⁾	56/38 ³⁾	64/40 ³⁾	NA/40 ³⁾	80/50 ³⁾	56/36 ³⁾	64/40 ³⁾	NA/40 ³⁾	80/50 ³⁾	56/32 ³⁾	64/40 ³⁾
120	NA/40 ³⁾	80/50 ³⁾	56/36 ³⁾	64/40 ³⁾	NA/38 ³⁾	80/44 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/38 ³⁾	80/44 ³⁾	56/32 ³⁾	64/36 ³⁾
140	NA/40 ³⁾	80/44 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/36 ³⁾	80/40 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/32 ³⁾	80/40 ³⁾	56/28 ³⁾	64/32 ³⁾
160	NA/38 ³⁾	80/40 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/32 ³⁾	80/36 ³⁾	56/28 ³⁾	64/32 ³⁾	NA/32 ³⁾	80/36 ³⁾	56/25 ³⁾	64/28 ³⁾
180	NA/32 ³⁾	80/40 ³⁾	56/28 ³⁾	64/32 ³⁾	NA/32 ³⁾	80/36 ³⁾	56/25 ³⁾	64/28 ³⁾	NA/28 ³⁾	80/32 ³⁾	56/22 ³⁾	64/24 ³⁾
≥200	NA/32 ³⁾	80/36 ³⁾	56/28 ³⁾	64/32 ³⁾	NA/28 ³⁾	80/32 ³⁾	56/19 ³⁾	64/22 ³⁾	NA/25 ³⁾	80/28 ³⁾	56/19 ³⁾	64/20 ³⁾

- Notes:**
- 1) Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.
 - 2) It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.
 - 3) It is possible to apply the minimal sheathing thickness when:
 - first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 - NA – no possibility of protection with utilisation of DPA2 for the determined maximum thickness 64 mm
 - second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, thickness acc. to the following key:
 - for the DPB1 gr. 72 mm, DPA2/C gr. 50 mm, DPB1/C gr. 56 mm: min. 12,5 mm
 - for the DPA2 gr. 50 mm, DPB1 gr. 56 mm, 64 mm, DPA2/C gr. 32 mm, 36 mm, 40 mm, 44 mm, 48 mm, DPB1/C gr. 36 mm, 38 mm, 40 mm, 44 mm, 48 mm, 50 mm: min. 25,0 mm
 - for the DPA2 gr. 44 mm, 48 mm, DPB1 gr. 44 mm, 48 mm, 50 mm, DPA2/C gr. 25 mm, 28 mm, DPB1/C gr. 24 mm, 28 mm: min. 37,5 mm
 - for the DPA2 gr. 28 mm, 32 mm, 36mm, 38 mm, 40 mm, DPB1 gr. 32 mm, 36 mm, 40 mm, DPA2/C gr. 19, 22 mm, DPB1/C gr. 20 mm, 22 mm: min. 50,0 mm

Important:
 The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

Table 8.3 The required thickness of the protective layer of the floor for the coefficient of effort $\alpha_M=0.6$ – fire exposition from the top.

b [mm]	Cross-section modulus b/h											
	1				0,5				0,25			
	Fire protection sheathing type ³⁾											
	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C	DPA2	DPB1	DPA2/C	DPB1/C
VERSION A SPACES BETWEEN BEAMS FILLED WITH MINERAL ROCK WOOL OF MIN. DENSITY 50 kg/m ³												
40	NA/50 ²⁾	72/64 ²⁾	44	44	56/40 ²⁾	64/40 ²⁾	36/32 ²⁾	36	38/19 ²⁾	32/18 ²⁾	19	18
50	64/44 ²⁾	72/56 ²⁾	44/40 ²⁾	44/40 ²⁾	44/32 ²⁾	56/36 ²⁾	25	28	25/19 ²⁾	24/18 ²⁾	19	18
60	64/40 ²⁾	64/48 ²⁾	40/32 ²⁾	44/40 ²⁾	44/25 ²⁾	48/28 ²⁾	19	20	19	18	19	18
80	56/38 ²⁾	64/44 ²⁾	36/32 ²⁾	36	38/19 ²⁾	44/18 ²⁾	19	18	19	18	19	18
100	44/32 ²⁾	56/36 ²⁾	25	28	25/19 ²⁾	25/18 ²⁾	19	18	19	18	19	18
120	44/25 ²⁾	48/28 ²⁾	19	20	19	18	19	18	19	18	19	18
140	44/19 ²⁾	44/22 ²⁾	19	18	19	18	19	18	19	18	19	18
160	38/19 ²⁾	36/18 ²⁾	19	18	19	18	19	18	19	18	19	18
180	32/19 ²⁾	32/18 ²⁾	19	18	19	18	19	18	19	18	19	18
≥200	25/19 ²⁾	24/18 ²⁾	19	18	19	18	19	18	19	18	19	18
VERSION B SPACES BETWEEN BEAMS WITHOUT FILLING (AIR GAP)												
40	NA/50 ³⁾	80/72 ³⁾	56	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾
50	NA/50 ³⁾	80/72 ³⁾	56/50 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/48 ³⁾	64/56 ³⁾	NA/50 ³⁾	80/72 ³⁾	56/48 ³⁾	64/56 ³⁾
60	NA/50 ³⁾	80/64 ³⁾	56/44 ³⁾	64/48 ³⁾	NA/48 ³⁾	80/64 ³⁾	56/44 ³⁾	64/48 ³⁾	NA/48 ³⁾	80/64 ³⁾	56/44 ³⁾	64/48 ³⁾
80	NA/48 ³⁾	80/64 ³⁾	56/40 ³⁾	64/44 ³⁾	NA/44 ³⁾	80/50 ³⁾	56/38 ³⁾	64/40 ³⁾	NA/40 ³⁾	80/56 ³⁾	56/38 ³⁾	64/40 ³⁾
100	NA/44 ³⁾	80/50 ³⁾	56/36 ³⁾	64/40 ³⁾	NA/40 ³⁾	80/48 ³⁾	56/32 ³⁾	64/40 ³⁾	NA/40 ³⁾	80/48 ³⁾	56/32 ³⁾	64/36 ³⁾
120	NA/40 ³⁾	80/44 ³⁾	56/32 ³⁾	64/40 ³⁾	NA/38 ³⁾	80/40 ³⁾	56/32 ³⁾	64/36 ³⁾	NA/32 ³⁾	80/40 ³⁾	56/28 ³⁾	64/32 ³⁾
140	NA/38 ³⁾	80/40 ³⁾	56/28 ³⁾	64/36 ³⁾	NA/32 ³⁾	80/36 ³⁾	56/28 ³⁾	64/32 ³⁾	NA/32 ³⁾	80/36 ³⁾	56/28 ³⁾	64/32 ³⁾
160	NA/32 ³⁾	80/40 ³⁾	56/28 ³⁾	64/32 ³⁾	NA/32 ³⁾	80/36 ³⁾	56/25 ³⁾	64/28 ³⁾	NA/28 ³⁾	80/32 ³⁾	56/22 ³⁾	64/24 ³⁾
180	NA/32 ³⁾	80/36 ³⁾	56/25 ³⁾	64/28 ³⁾	NA/28 ³⁾	80/32 ³⁾	56/19 ³⁾	64/22 ³⁾	NA/25 ³⁾	80/28 ³⁾	56/19 ³⁾	64/20 ³⁾
≥200	NA/28 ³⁾	80/32 ³⁾	56/22 ³⁾	64/24 ³⁾	NA/22 ³⁾	80/24 ³⁾	56/19 ³⁾	64/18 ³⁾	NA/19 ³⁾	80/22 ³⁾	56/19 ³⁾	64/18 ³⁾

Notes:
¹⁾ Fire protection sheathing type: DPA2 – Duripanel A2; DPB1 – Duripanel B1; DPA2/C – Duripanel A2 + Cementex thickness 8 mm; DPB1/C – Duripanel B1+ Cementex thickness 8 mm.
²⁾ It is possible to apply the minimal sheathing thickness when:
 • first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 • second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, min. thickness 12.5 mm.
³⁾ It is possible to apply the minimal sheathing thickness when:
 • first value: the bottom side of the floor is not provided with sheathing (the floor is protected from the top side only)
 NA – no possibility of protection with utilisation of DPA2 for the determined maximum thickness 64 mm
 • second value: the floor is protected from the bottom side with the Nida Ogień Plus or Nida Ogień Kompakt boards, thickness acc. to the following key:
 - for the DPB1 gr. 72 mm, DPA2/C gr. 50 mm, DPB1/C gr. 56 mm: min. 12,5 mm
 - for the DPA2 gr. 50 mm, DPB1 gr. 56 mm, 64 mm, DPA2/C gr. 32 mm, 36 mm, 40 mm, 44 mm, 48 mm, DPB1/C gr. 36 mm, 38 mm, 40 mm, 44 mm, 48 mm, 50 mm: min. 25,0 mm
 - for the DPA2 gr. 44 mm, 48 mm, DPB1 gr. 44 mm, 48 mm, 50 mm, DPA2/C gr. 25 mm, 28 mm, DPB1/C gr. 24 mm, 28 mm: min. 37,5 mm
 - for the DPA2 gr. 28 mm, 32 mm, 36mm, 38 mm, 40 mm, DPB1 gr. 32 mm, 36 mm, 40 mm, DPA2/C gr. 19, 22 mm, DPB1/C gr. 18 mm, 20 mm, 22 mm: min. 50,0 mm

Important:
 The presented configurations and sheathing thickness values are presented with respect to meeting the fire resistance requirements only. It is always required to perform static calculations, or apply the guidelines of the manufacturer in order to meet the requirements in the range of static strength, which determines the spacing of the structural timber floor joists. It is acceptable to apply other board thickness and multi-board configuration of the sheathing keeping the same minimal thickness of the protective layer.

mechanical characteristics of timber ceilings – acceptable distributed „q” and concentrated „F” load

Ceilings supported by timber load-bearing beams are becoming increasingly common as far as horizontal building partitions are concerned. Their structure is fairly simple as they consist mainly of timber load-bearing beams, structural surface boards, acoustic insulation, and aesthetic finish from the bottom side, which usually takes the form of suspended ceilings.

But it must be kept in mind that they are load-bearing elements and they must meet the provisions of the Standard PN-EN 1991-1-1 (Eurocode 1: Actions on structures – Part 1-1: General actions - Densities, self-weight, imposed loads for buildings) with respect to the acceptable loads which were classified depending on the type and intended purpose of a given building structure. For the horizontal load-bearing partitions the Eurocode 1 mentioned above states the requirements in a more complex manner as the loads that might occur are of diverse nature, thus designing a load-bearing structure is one thing, while selecting the appropriate structural surface boards is another problem. The range of products offered by Siniat includes those specifically tailored for such applications, namely the DURIPANEL B1 or DURIPANEL A2 non-flammable and structural cement-particle boards.

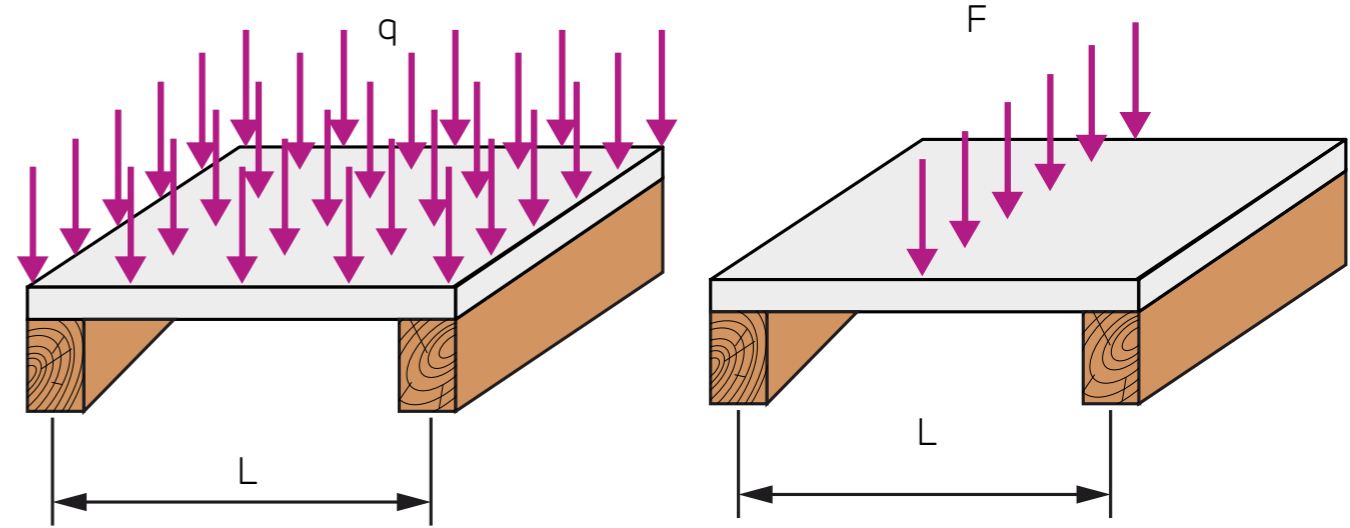
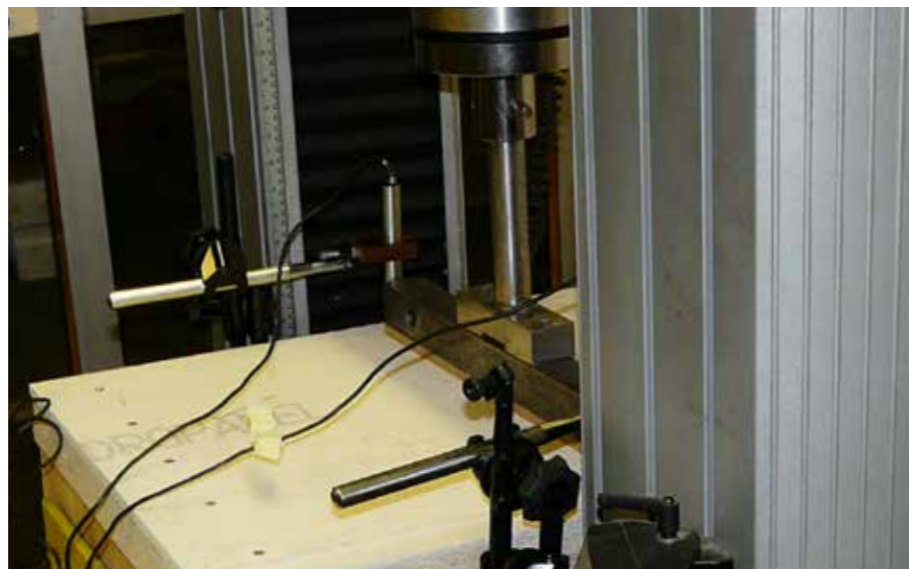


Fig. 1. The diagrams above present the load distribution modes for the DURIPANEL structural filling boards.



The following tables have been developed for efficient and safe selection of such sheathing boards meeting the requirements arising from the uniformly distributed q and concentrated F loads were formulated on the basis of the mechanical tests carried out at Instytut Techniki Budowlanej [Building Research Institute].

It is recommended to perform the selection process of the structural sheathing constituting the top shell of a ceiling while taking those two parameters into account.

It will give us certainty that the structural substrate of the DURIPANEL boards, or their combinations with other products, shall withstand all the loads arising from the designed way of utilisation.

UNIFORMLY DISTRIBUTED AND CONCENTRATED ACCEPTABLE LOAD SELECTION TABLES – DURIPANEL B1

Table 9.1 Acceptable distributed load q [daN/m²] for ceilings with sheathing of Duripanel B1 boards.

Type 1	Duripanel B1												
	Thickness [mm]												
Structure	18	20	22	24	28	32	36	40	44	50	64	72	80
Duripanel	1x18	1x20	1x22	1x24	1x28	1x32	1x36	1x40	1x20	1x22	2x32	1x40	2x40
Span l_0 [mm]	Acceptable distributed load q [daN/m ²]												
200	2887	3224	3372	4332	6284	7421	9751	10146	8022	12205	16127	18213	21008
250	1847	2064	2158	2772	4022	4749	6241	6493	5134	7811	10321	11656	13445
300	1283	1433	1499	1925	2793	3298	4334	4509	3565	5424	7167	8095	9337
350	943	1053	1101	1414	2052	2423	3184	3313	2619	3985	5266	5947	6860
400	722	806	843	1083	1571	1855	2438	2537	2006	3051	4032	4553	5252
450	570	637	666	856	1241	1466	1926	2004	1585	2411	3186	3598	4150
500	462	516	539	693	1005	1187	1560	1623	1284	1953	2580	2914	3361
550	382	426	446	573	831	981	1289	1342	1061	1614	2132	2408	2778
600	321	358	375	481	698	825	1083	1127	891	1356	1792	2024	2334
650	273	305	319	410	595	703	923	961	759	1155	1527	1724	1989
700	236	263	275	354	513	606	796	828	655	996	1316	1487	1715
750	205	229	240	308	447	528	693	721	570	868	1147	1295	1494
800	180	202	211	271	393	464	609	634	501	763	1008	1138	1313
850	160	179	187	240	348	411	540	562	444	676	893	1008	1163
900	143	159	167	214	310	366	482	501	396	603	796	899	1037
950	128	143	149	192	279	329	432	450	356	541	715	807	931
1000	115	129	135	173	251	297	390	406	321	488	645	729	840
1050	105	117	122	157	228	269	354	368	291	443	585	661	762
1100	95	107	111	143	208	245	322	335	265	403	533	602	694
1150	87	98	102	131	190	224	295	307	243	369	488	551	635
1200	80	90	94	120	175	206	271	282	223	339	448	506	584

Table 9.2 Acceptable concentrated load F [daN/m] for ceilings with sheathing of Duripanel B1 boards.

Type 1	Duripanel B1												
	Thickness [mm]												
Structure	18	20	22	24	28	32	36	40	44	50	64	72	80
Duripanel	1x18	1x20	1x22	1x24	1x28	1x32	1x36	1x40	1x20	1x22	2x32	1x40	2x40
Span l_0 [mm]	Acceptable concentrated load F [daN/m]												
200	481	537	562	722	1047	1237	1625	1691	1337	2034	2688	3036	3501
250	385	430	450	578	838	989	1300	1353	1070	1627	2150	2428	2801
300	321	358	375	481	698	825	1083	1127	891	1356	1792	2024	2334
350	275	307	321	413	598	707	929	966	764	1162	1536	1735	2001
400	241	269	281	361	524	618	813	846	669	1017	1344	1518	1751
450	214	239	250	321	465	550	722	752	594	904	1195	1349	1556
500	192	215	225	289	419	495	650	676	535	814	1075	1214	1401
550	175	195	204	263	381	450	591	615	486	740	977	1104	1273
600	160	179	187	241	349	412	542	564	446	678	896	1012	1167
650	148	165	173	222	322	381	500	520	411	626	827	934	1077
700	137	154	161	206	299	353	464	483	382	581	768	867	1000
750	128	143	150	193	279	330	433	451	357	542	717	809	934
800	120	134	140	180	262	309	406	423	334	509	672	759	875
850	113	126	132	170	246	291	382	398	315	479	632	714	824
900	107	119	125	160	233	275	361	376	297	452	597	675	778
950	101	113	118	152	220	260	342	356	281	428	566	639	737
1000	96	107	112	144	209	247	325	338	267	407	538	607	700
1050	92	102	107	138	199	236	310	322	255	387	512	578	667
1100	87	98	102	131	190	225	295	307	243	370	489	552	637
1150	84	93	98	126	182	215	283	294	233	354	467	528	609
1200	80	90	94	120	175	206	271	282	223	339	448	506	584

UNIFORMLY DISTRIBUTED AND CONCENTRATED ACCEPTABLE LOAD SELECTION TABLES – CEMENTEX 8 MM + DURIPANEL B1

Table 10.1 Acceptable distributed load q [daN/m²] for ceilings with sheathing of Cementex 8 mm + Duripanel B1 boards

Type 3		Cementex 8 mm + Duripanel B1											
Structure	Thickness [mm]												
	8+18	8+20	8+22	8+24	8+28	8+32	8+36	8+40	8+44	8+50	8+64	8+72	8+80
Cementex	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8
Duripanel	1x18	1x20	1x22	1x24	1x28	1x32	1x36	1x40	1x20	1x22	2x32	1x40	2x40
									1x22	1x28		1x32	
Span l_g [mm]	Acceptable distributed load q [daN/m ²]												
200	3783	5100	5649	6375	8196	8568	10682	10833	10173	13103	17554	18897	20501
250	2421	3264	3616	4080	5245	5483	6837	6933	6511	8386	11234	12094	13121
300	1681	2267	2511	2833	3643	3808	4748	4815	4521	5824	7802	8399	9111
350	1235	1665	1845	2082	2676	2798	3488	3537	3322	4279	5732	6170	6694
400	946	1275	1412	1594	2049	2142	2671	2708	2543	3276	4388	4724	5125
450	747	1007	1116	1259	1619	1692	2110	2140	2009	2588	3467	3733	4050
500	605	816	904	1020	1311	1371	1709	1733	1628	2097	2809	3024	3280
550	500	674	747	843	1084	1133	1413	1433	1345	1733	2321	2499	2711
600	420	567	628	708	911	952	1187	1204	1130	1456	1950	2100	2278
650	358	483	535	604	776	811	1011	1026	963	1241	1662	1789	1941
700	309	416	461	520	669	699	872	884	830	1070	1433	1543	1674
750	269	363	402	453	583	609	760	770	723	932	1248	1344	1458
800	236	319	353	398	512	535	668	677	636	819	1097	1181	1281
850	209	282	313	353	454	474	591	600	563	725	972	1046	1135
900	187	252	279	315	405	423	528	535	502	647	867	933	1012
950	168	226	250	283	363	380	473	480	451	581	778	838	909
1000	151	204	226	255	328	343	427	433	407	524	702	756	820
1050	137	185	205	231	297	311	388	393	369	475	637	686	744
1100	125	169	187	211	271	283	353	358	336	433	580	625	678
1150	114	154	171	193	248	259	323	328	308	396	531	572	620
1200	105	142	157	177	228	238	297	301	283	364	488	525	569

Table 10.2 Acceptable concentrated load F [daN/m] for ceilings with sheathing of Cementex 8 mm + Duripanel B1 boards

Type 3		Cementex 8 mm + Duripanel B1											
Structure	Thickness [mm]												
	8+18	8+20	8+22	8+24	8+28	8+32	8+36	8+40	8+44	8+50	8+64	8+72	8+80
Cementex	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8
Duripanel	1x18	1x20	1x22	1x24	1x28	1x32	1x36	1x40	1x20	1x22	2x32	1x40	2x40
									1x22	1x28		1x32	
Span l_g [mm]	Acceptable concentrated load F [daN/m]												
200	630	850	942	1063	1366	1428	1780	1806	1696	2184	2926	3149	3417
250	504	680	753	850	1093	1142	1424	1444	1356	1747	2340	2520	2733
300	420	567	628	708	911	952	1187	1204	1130	1456	1950	2100	2278
350	360	486	538	607	781	816	1017	1032	969	1248	1672	1800	1952
400	315	425	471	531	683	714	890	903	848	1092	1463	1575	1708
450	280	378	418	472	607	635	791	802	754	971	1300	1400	1519
500	252	340	377	425	546	571	712	722	678	874	1170	1260	1367
550	229	309	342	386	497	519	647	657	617	794	1064	1145	1242
600	210	283	314	354	455	476	593	602	565	728	975	1050	1139
650	194	262	290	327	420	439	548	556	522	672	900	969	1051
700	180	243	269	304	390	408	509	516	484	624	836	900	976
750	168	227	251	283	364	381	475	481	452	582	780	840	911
800	158	212	235	266	342	357	445	451	424	546	731	787	854
850	148	200	222	250	321	336	419	425	399	514	688	741	804
900	140	189	209	236	304	317	396	401	377	485	650	700	759
950	133	179	198	224	288	301	375	380	357	460	616	663	719
1000	126	170	188	213	273	286	356	361	339	437	585	630	683
1050	120	162	179	202	260	272	339	344	323	416	557	600	651
1100	115	155	171	193	248	260	324	328	308	397	532	573	621
1150	110	148	164	185	238	248	310	314	295	380	509	548	594
1200	105	142	157	177	228	238	297	301	283	364	488	525	569

UNIFORMLY DISTRIBUTED AND CONCENTRATED ACCEPTABLE LOAD SELECTION TABLES – DURIPANEL B1 + OSB 22 MM

Table 11.1 Acceptable distributed load q [daN/m²] for ceilings with sheathing of Duripanel B1 + OSB 22 mm boards.

Type 5		Duripanel B1 + OSB 22 mm											
Structure	Thickness [mm]												
	18+22	20+22	22+22	24+22	28+22	32+22	36+22	40+22	44+22	50+22	64+22	72+22	80+22
Duripanel	1x18	1x20	1x22	1x24	1x28	1x32	1x36	1x40	1x20	1x22	2x32	1x40	2x40
OSB	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22
Span l_g [mm]	Acceptable distributed load q [daN/m ²]												
200	9857	8907	10231	10339	10787	11174	10743	11565	12319	14031	16782	21141	24009
250	6309	5700	6548	6617	6904	7151	6876	7401	7884	8980	10740	13530	15366
300	4381	3959	4547	4595	4794	4966	4775	5140	5475	6236	7459	9396	10671
350	3219	2908	3341	3376	3522	3648	3508	3776	4022	4582	5480	6903	7840
400	2464	2227	2558	2585	2697	2793	2686	2891	3080	3508	4196	5285	6002
450	1947	1759	2021	2042	2131	2207	2122	2284	2433	2772	3315	4176	4743
500	1577	1425	1637	1654	1726	1788	1719	1850	1971	2245	2685	3383	3841
550	1303	1178	1353	1367	1426	1477	1421	1529	1629	1855	2219	2795	3175
600	1095	990	1137	1149	1199	1242	1194	1285	1369	1559	1865	2349	2668
650	933	843	969	979	1021	1058	1017	1095	1166	1328	1589	2001	2273
700	805	727	835	844	881	912	877	944	1006	1145	1370	1726	1960
750	701	633	728	735	767	795	764	822	876	998	1193	1503	1707
800	616	557	639	646	674	698	671	723	770	877	1049	1321	1501
850	546	493	566	572	597	619	595	640	682	777	929	1170	1329
900	487	440	505	511	533	552	531	571	608	693	829	1044	1186
950	437	395	453	458	478	495	476	513	546	622	744	937	1064
1000	394	356	409	414	431	447	430	463	493	561	671	846	960
1050	358	323	371	375	391	405	390	420	447	509	609	767	871
1100	326	294	338	342	357	369	355	382	407	464	555	699	794
1150	298	269	309	313	326	338	325	350	373	424	508	639	726
1200	274	247	284	287	300	310	298	321	342	390	466	587	667

Table 11.2 Acceptable concentrated load F [daN/m] for ceilings with sheathing of Duripanel B1 + OSB 22 mm boards.

Type 5		Duripanel B1 + OSB 22 mm											
Structure	Thickness [mm]												
	18+22	20+22	22+22	24+22	28+22	32+22	36+22	40+22	44+22	50+22	64+22	72+22	80+22
Duripanel	1x18	1x20	1x22	1x24	1x28	1x32	1x36	1x40	1x20	1x22	2x32	1x40	2x40
OSB	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22
Span l_g [mm]	Acceptable concentrated load F [daN/m]												
200	1643	1484	1705	1723	1798	1862	1791	1927	2053	2339	2797	3523	4002
250	1314	1188	1364	1379	1438	1490	1432	1542	1642	1871	2238	2819	3201
300	1095	990	1137	1149	1199	1242	1194	1285	1369	1559	1865	2349	2668



UNIFORMLY DISTRIBUTED AND CONCENTRATED ACCEPTABLE LOAD SELECTION TABLES – CEMENTEX 8 MM + DURIPANEL A2 + OSB 22 MM

Table 16.1 Acceptable distributed load q [daN/m²] for ceilings with sheathing of Cementex 8 mm + Duripanel A2 + OSB 22 mm.

Type 8 Cementex 8 mm + Duripanel A2 + OSB 22 mm												
Structure	Thickness [mm]											
	8+19+22	8+22+22	8+25+22	8+28+22	8+32+22	8+36+22	8+38+22	8+44+22	8+48+22	8+50+22	8+56+22	8+64+22
Cementex	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8
Duripanel	1x19	1x22	1x25	1x28	1x32	1x10	1x10	2x22	1x20	2x25	2x28	4x16
OSB	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22
Span l ₀ [mm]	Acceptable distributed load q [daN/m ²]											
200	13499	13062	12866	13162	12698	13834	10800	13932	13932	14413	16120	10214
250	8639	8360	8234	8424	8127	8854	6912	8916	8916	9224	10317	10755
300	5999	5805	5718	5850	5644	6148	4800	6192	6192	6406	7164	7469
350	4408	4265	4201	4298	4146	4517	3527	4549	4549	4706	5264	5487
400	3375	3266	3217	3290	3175	3458	2700	3483	3483	3603	4030	4201
450	2666	2580	2541	2600	2508	2733	2133	2752	2752	2847	3184	3320
500	2160	2090	2059	2106	2032	2213	1728	2229	2229	2306	2579	2689
550	1785	1727	1701	1740	1679	1829	1428	1842	1842	1906	2132	2222
600	1500	1451	1430	1462	1411	1537	1200	1548	1548	1601	1791	1867
650	1278	1237	1218	1246	1202	1310	1022	1319	1319	1365	1526	1591
700	1102	1066	1050	1074	1037	1129	882	1137	1137	1177	1316	1372
750	960	929	915	936	903	984	768	991	991	1025	1146	1195
800	844	816	804	823	794	865	675	871	871	901	1007	1050
850	747	723	712	729	703	766	598	771	771	798	892	930
900	667	645	635	650	627	683	533	688	688	712	796	830
950	598	579	570	583	563	613	479	617	617	639	714	745
1000	540	522	515	526	508	553	432	557	557	577	645	672
1050	490	474	467	478	461	502	392	505	505	523	585	610
1100	446	432	425	435	420	457	357	461	461	476	533	556
1150	408	395	389	398	384	418	327	421	421	436	488	508
1200	375	363	357	366	353	384	300	387	387	400	448	467

Table 16.2 Acceptable concentrated load F [daN/m] for ceilings with sheathing of Cementex 8 mm + Duripanel A2 + OSB 22 mm boards.

Type 8 Cementex 8 mm + Duripanel A2 + OSB 22 mm												
Structure	Thickness [mm]											
	8+19+22	8+22+22	8+25+22	8+28+22	8+32+22	8+36+22	8+38+22	8+44+22	8+48+22	8+50+22	8+56+22	8+64+22
Cementex	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8	1x8
Duripanel	1x19	1x22	1x25	1x28	1x32	1x10	1x10	2x22	1x20	2x25	2x28	4x16
OSB	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22	1x22
Span l ₀ [mm]	Acceptable concentrated load F [daN/m]											
200	2250	2177	2144	2194	2116	2306	1800	2322	2322	2402	2687	1702
250	1800	1742	1715	1755	1693	1845	1440	1858	1858	1922	2149	2241
300	1500	1451	1430	1462	1411	1537	1200	1548	1548	1601	1791	1867
350	1286	1244	1225	1254	1209	1318	1029	1327	1327	1373	1535	1600
400	1125	1089	1072	1097	1058	1153	900	1161	1161	1201	1343	1400
450	1000	968	953	975	941	1025	800	1032	1032	1068	1194	1245
500	900	871	858	877	847	922	720	929	929	961	1075	1120
550	818	792	780	798	770	838	655	844	844	874	977	1018
600	750	726	715	731	705	769	600	774	774	801	896	934
650	692	670	660	675	651	709	554	714	714	739	827	862
700	643	622	613	627	605	659	514	663	663	686	768	800
750	600	581	572	585	564	615	480	619	619	641	716	747
800	562	544	536	548	529	576	450	580	580	601	672	700
850	529	512	505	516	498	543	424	546	546	565	632	659
900	500	484	477	487	470	512	400	516	516	534	597	622
950	474	458	451	462	446	485	379	489	489	506	566	590
1000	450	435	429	439	423	461	360	464	464	480	537	560
1050	429	415	408	418	403	439	343	442	442	458	512	533
1100	409	396	390	399	385	419	327	422	422	437	488	509
1150	391	379	373	382	368	401	313	404	404	418	467	487
1200	375	363	357	366	353	384	300	387	387	400	448	467

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