REI 90

FIRES
The Experts On Fire Safety

TEST REPORT FIRES-FR-162-14-AUNE

LGSF Floor joists – multi-storey buildings, system BORABELA

SNAS
Reg. No. 041/S-159

FIRES
The Experts on Fire Safety

TEST REPORT

FIRES-FR-162-14-AUNE

Tested property:	Fire resistance
Test method:	EN 1365-2:1999
Type of test:	Accredited / Notified (NB 1396)
Date of issue:	25. 09. 2014
Name of the product:	LGSF Floor joists – multi-storey buildings, system BORABELA
Manufacturer:	BORABELA s.r.o., Anenské nám. 948/3, Staré Město, 110 00 Praha 1, Czech Republic
Sponsor:	BORABELA s.r.o., Anenské nám. 948/3, Staré Město, 110 00 Praha 1, Czech Republic
Test carried out:	Fires, s.r.o., Testing laboratory
Task No.:	PR-14-0310
Specimen received:	02. 09. 2014
Date of the test:	03. 09. 2014
Technician responsible for the technical side of this report:	Michaela Gorlická

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Test reports: 3 Copy No.: 2

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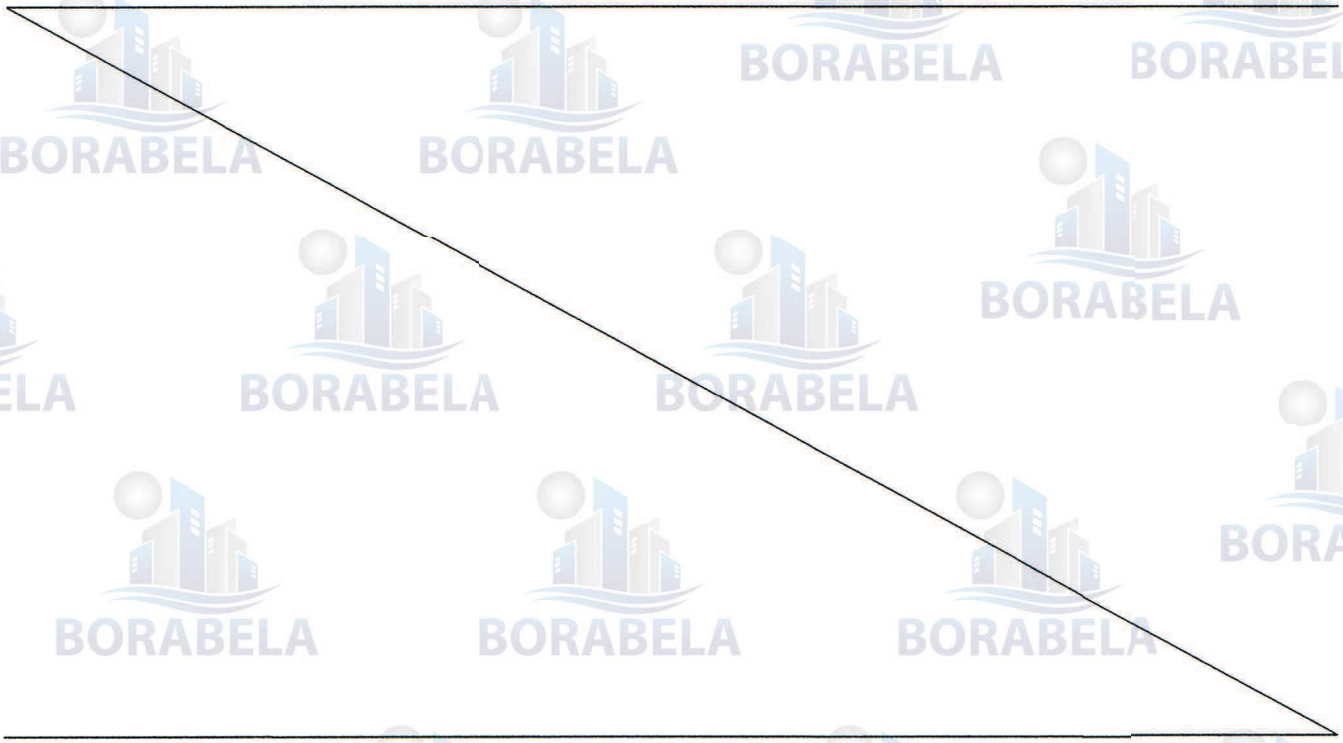
6. CLOSING

Evaluation of the test:

Performance criterion	**Time till the performance criterion is achieved**
integrity – sustained flaming	90 minutes no failure
integrity – gap gauges ∅ 6 mm and ∅ 25 mm	90 minutes no failure
integrity – cotton pad	90 minutes no failure
loadbearing capacity – vertical contraction (negative elongation) (157,48 mm)	90 minutes no failure
loadbearing capacity – rate of vertical contraction (negative elongation) (6,99 mm/min)	90 minutes no failure
insulation – average temperature (140 K)	90 minutes no failure
insulation – maximal temperature (180 K)	90 minutes no failure
radiation 15 $kW.m^{-2}$	90 minutes no failure

Note: limiting values are calculated for loadbearing element (C 254 profile).

The fire test was terminated after period of 90 minutes at the request of sponsor.



4. PREPARATION OF THE TEST

4.1 DESCRIPTION OF THE SPECIMEN STRUCTURE

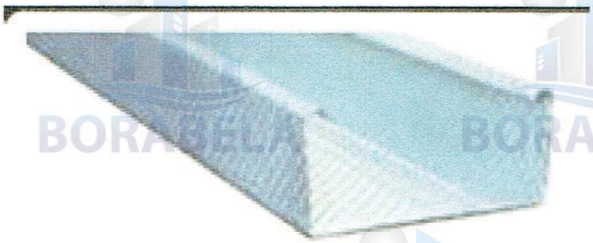
The specimen is LGSF Floor joists – multi-storey buildings, system BORABELA.

Dimensions
overall specimen dimension (height x width x thickness) (4000 x 3000 x 356) mm

Construction of the specimen from the bottom face:

: two layers of the fire resistance plaster board Rigips RF15 (manufacturer: Rigips), each 15 mm thick, with bulk density 840 kg/m^3, fixed to the each steel Rigips R-CD RigiProfil profile by means of steel fasteners Rigips (3,5 x 25) mm – first layer and second layer by steel fasteners Rigips (3,5 x 45) mm (manufacturer: Rigips) placed at the edges of boards and next in spacing 150 mm – 200 mm around the perimeter of boards. The joints of plaster boards are covered by glass tape and standard gypsum mastic Rigips Vario (manufacturer: Rigips).

:the steel Rigips R-CD RigiProfil profiles (KB510191) made of steel zinc coated sheet with dimensions (27 x 60 x 27) mm with overall thickness 1,2 mm after special process of steel hardening (manufacturer: Rigips). These profiles are placed across to the loadbearing C profiles at the edges of C profiles and next in spacing 400 mm. CD profiles are fixed to the loadbearing C profiles by means of moving washers for CD profiles and pair of steel screws SC2/21-H2-4,2x30 (manufacturer: SFS intec).



:the bottom edge of loadbearing steel C profiles is covered by strips of fire resistance plaster board Rigips RF15, 15 mm thick, 60 mm wide

: loadbearing steel construction made of 6 longitudinal steel C profiles (254 x 50 x 15) mm, made of steel zinc coated sheet, 1,96 mm thick (grade of steel S 350 GD Zn 275_EN 10-346) (manufacturer:

Framefactory Sp. Z o.o., Poland), placed in spacing 600 mm. Perforation of profiles (holes for service installation): ∅ 165 mm in spacing 2000 mm.

Shorter edges of specimen are closed by steel profiles U (254 x 70) mm made of steel zinc coated sheet, 1,96 mm thick (grade of steel S 350 GD Zn 275_EN 10-346) (manufacturer: Framefactory Sp. Z o.o., Poland). Longitudinal C profiles 254 are fixed to the U 254 profiles by screws SD6–H15-5,5x25 (manufacturer: SFS intec.) through the steel plates.

:Cavity between C profiles is filled by blown mineral wool CLIMASTONE, 125 mm thick with bulk density 45 – 70 kg/m^3 (manufacturer: CIUR a.s.).

: two layers of chipboards OSB/EG OSB-3 4 PD, each 15 mm thick (manufacturer: Egger) with bulk density > 600 kg/m^3. The maximal dimension of one board is (625 x 2500) mm. The second layer of chipboards is fixed to the specimen in such way that cover the joints of first layer of chipboards. The chipboards are fixed to each other by groove-tongue joint and to the C profiles by means of steel fasteners SC3/35-PH2-4,8x45 (manufacturer: SFS intec) placed 50 mm from the edges of boards and next in spacing 150 mm – 200 mm.

More detailed information about construction of specimen is shown in the drawings and photo documentation which form an integral part of this test report. Drawings were delivered by sponsor, photo documentation was taken during preparation of test specimen.

All the information about technical specifications of used materials and semi-products, information about their type sign were delivered by sponsor. This information was not subject of the inspection of specimen. Parameters which were checked are quoted in paragraph 4.3.