

CONTRAPANEL

IMPACT RESISTANT
WALL AND CEILING LININGS



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DANOLINE CONTRAPANEL - EXCELLENT ACOUSTICS, MODERN DESIGN UND ENORMOUS RESISTANCE

The increasing demands with regard to acoustics, design and impact resistance in public areas represent a growing challenge. In schools and sportshalls in particular, walls and ceilings must be able to withstand particularly great physical stresses and yet display a high degree of adaptability to the existing circumstances.

Danoline's Contrapanel impact resistant wall and ceiling linings have been specially developed for the renovation and new construction of such intensively used facilities. Furthermore, the Contrapanel lining possesses excellent room acoustic qualities and a persuasively attractive and modern design.

THE ADVANTAGES AT A GLANCE:

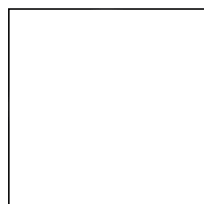
- High mechanical resistance
- Outstanding surface quality
- Easy to clean and maintain
- Simple installation
- Excellent acoustic and sound absorption values
- Attractive modern design
- Capable of subsequent repair

IMPACT RESISTANCE

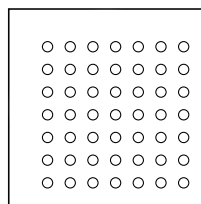
The surface bonding strength as well as the overall construction of the Contrapanel lining system has been tested in accordance with DIN EN 13964 Annex D „Testing of shock resistance“ as well as DIN 18032-3 „Testing of ball impact resistance“ and is thus able to withstand the toughest demands made for wall and ceiling linings in the construction of sports facilities. The overall concept includes its use as an acoustically effective lining to improve the reverberation time in large spaces. Contrapanel is manufactured in accordance with DIN EN 14190 and should be used as a lining in accordance with DIN EN 13964.



SURFACES



Danoline Contrapanel unperforated Regula R white (like RAL 9016) with bevelled edges on 4 sides.



Danoline Contrapanel perforated Globe G1F 6/15, white (like RAL 9016) with bevelled edges on 4 sides.

Perforation percentage: 10.18 %

STANDARD PANEL SIZE



600 x 1200 mm



600 x 1800 mm



600 x 2400 mm

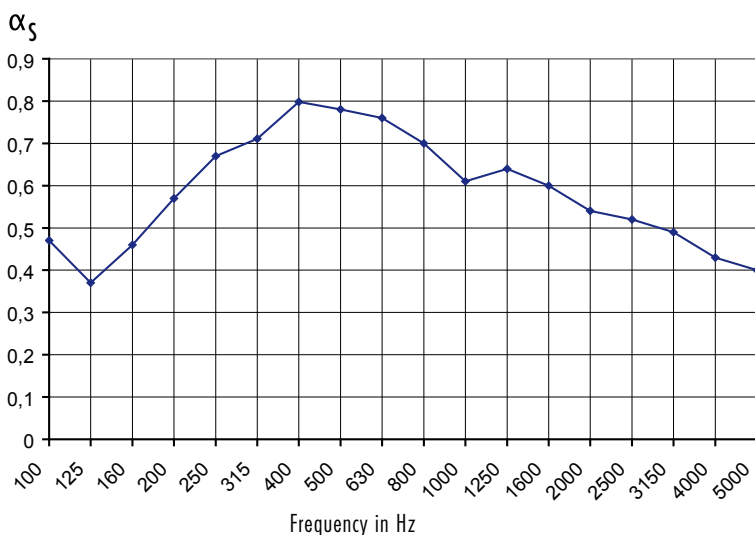
PANEL WEIGHT (without substructure)

unperforated: 9.4 kg/m²

perforated: 8.5 kg/m²

ACOUSTIC VALUES FOR CEILING LINING

Tested suspension height: 200 mm without mineral wool
Sound absorption for G1F in accordance with EN 11654: $\alpha_w = 0.65$.



Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
α_w	0.47	0.37	0.46	0.57	0.67	0.71	0.80	0.78	0.76	0.70	0.61	0.64	0.60	0.54	0.52	0.49	0.43	0.40

BUILDING MATERIAL CLASSES

National building material classes
DIN 4102- Part 1 non-combustible A2
Test certificate abP- MPA-E-01-656

European building material classes
DIN EN 13501-1 non-combustible A2 - s1, d0 (C1)

The manufacture of Danoline acoustic gypsum panels is externally monitored.

REVERBERATION TIME

Calculation of the reverberation time is always undertaken by engineering firms for building acoustics.

ARRANGEMENT OF SCREWS FOR CEILING LINING

The distance between the CD secondary profiles should be max. 300 mm.

The Contrapanel panels are laid transversely to the CD secondary profiles and fixed with cross-head screws at centre distances of max. 170 mm.

Screwfixing points are in the unperforated perimeter edge area and between the perforated sections.

ARRANGEMENT OF SCREWS FOR WALL LINING

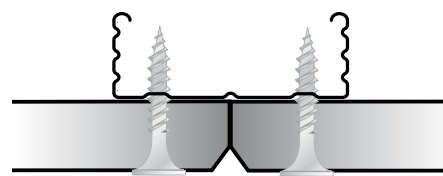
The distance between the CD substructure should be max. 200 mm.

The Contrapanel panels are laid transversely to the CD substructure and fixed with cross-head screws at centre distances of max. 170 mm.

Screwfixing points are in the unperforated perimeter edge area and between the perforated sections.

FIXING

- Fixing on metal substructure
- Round cross-head screws
- White head as RAL 9016
- Open bevelled edge



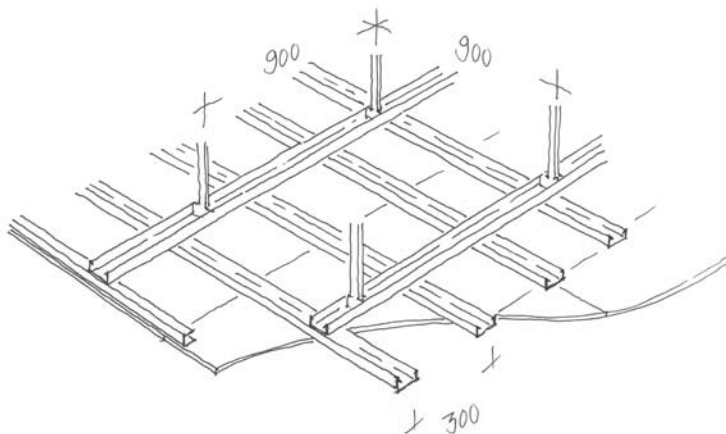
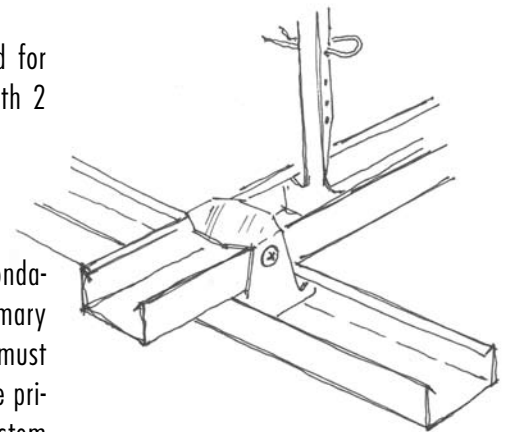
CONSTRUCTION NOTES

HANGING

Rigid nonius hangers at a distance of ≤ 900 mm on the base profiles are used for hanging. The upper and lower parts of the nonius hangers must be connected with 2 locking pins in accordance with 18168.

SUBSTRUCTURE, HUNG WITH METAL PROFILES

The Contrapanel panels are fixed to a CD substructure consisting of primary and secondary profiles. The centre distance between profiles is ≤ 900 mm. However the first primary profile must not be hung further than 300 mm from the wall. An UD wall profile must be used adjacent to solid structures. The grid of secondary profiles is attached to the primary profiles with a centre distance between profiles of ≤ 300 mm by means of system compatible cross connectors. The cross connectors must be screwed to the primary profile (see sketch). The UD profile must be attached to the surrounding walls using wall plugs/screws at max. 400 mm intervals. The panels are attached transversely to the secondary profiles. All abutting leading edges must be backed by a secondary runner.



INSTALLATION OF PANELS

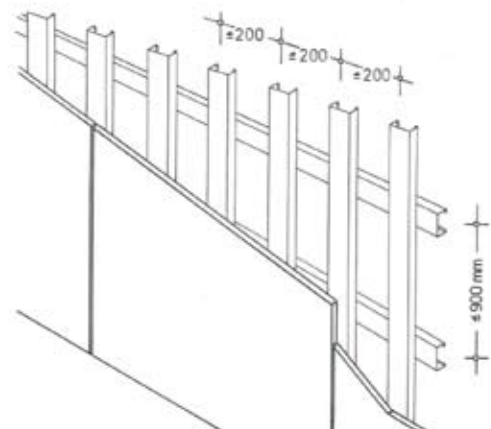
The Contrapanel panels are fixed transversely to the CD secondary profiles using screws at max. intervals of 170 mm. To aid fixing a template may be used with preprepared screw holes. The screws (3.8 x33 mm) remain visible with a white head (Danoline screw 6389).

Installations such as lighting fixtures, loud speakers, etc. should be mounted independently in accordance with their certification. If necessary, additional profiles should be installed as mounting frames.

INSTALLATION OF WALL LINING

The Contrapanel panels are fixed transversely to the CD secondary profiles, at intervals of ≤ 200 mm, which are attached and screwed to CD primary runners, at intervals of ≤ 900 mm, such as to prevent slipping. Installation against solid building parts can be done with adjustable yokes (e.g. direct suspension construction). Cavities can additionally be filled with mineral wool to improve sound absorption. Screw fixing should be as specified above.

Extra impact surfaces should have a double Contrapanel lining without offsetting the panels. It is recommended that an additional fixed UD profile 50/28/50/1 mm (special profile) is used in the area where the panels connect with the floor.



TESTED WALL AND CEILING LININGS WITH DANOLINE CONTRAPANEL

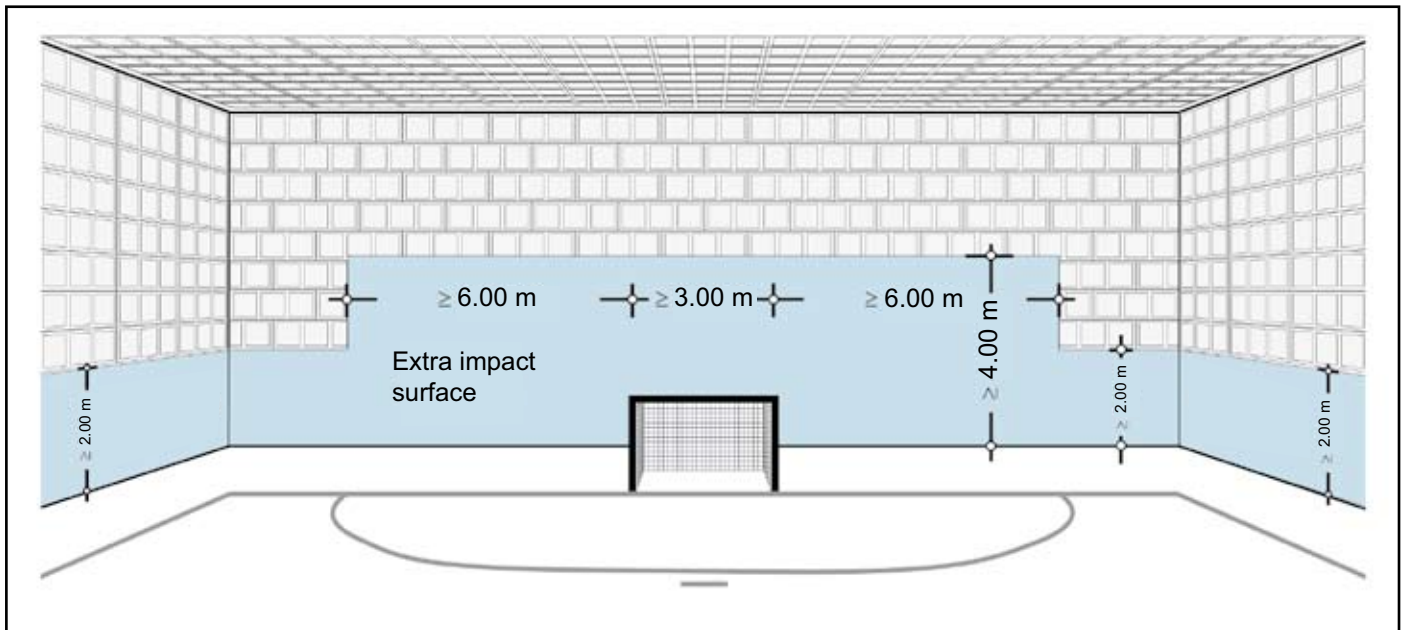
IN GYMNASIUM, GAMES AND MULTIPLE PURPOSE HALLS

In line with the standard test regulations currently in force, building elements installed inside halls, including their substructure (e.g. wall and ceiling linings, doors, windows, ventilation grids, lights, clocks, etc.) must be tested for ball impact resistance with regard to the stresses resulting from ball games, e.g. football, handball or hockey.

Building elements are categorised as "ball impact resistant" if they remain unaffected by the mechanical impact of balls.

Danoline Contrapanel was tested for ball impact resistance both as a ceiling and wall lining, and additionally as a double layer of lining for extra resistance in special impact areas (i.e. areas around the goal as illustrated below).

DIAGRAMMATIC SKETCH



CERTIFICATION AS CEILING LINING

DIN 18032 Part 3: 1997-04 Test of ball impact resistance in accordance with test report 901 4121-1 /Sc/Kf MPA Stuttgart
EN 13964: 2004 Annex D Class 1A Test of shock resistance in accordance with test report 901 4121-1 /Sc/Kf MPA Stuttgart

CERTIFICATION AS WALL LINING WITHOUT EXTRA IMPACT SURFACES

DIN 18032 Part 3: 1997-04 Test of ball impact resistance in accordance with test report 901 4121-2/Sc/Kf MPA Stuttgart

CERTIFICATION AS WALL LINING WITH EXTRA IMPACT SURFACES

DIN 18032 Part 3: 1997-04 Test of ball impact resistance in accordance with test report 901 4121-3/Sc/Kf MPA Stuttgart



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