



Deutsche
Akkreditierungsstelle
D-PL-11016-01-00

Test Report

Testing of safety against ball throwing

Report-No.: 903 1569 000/Man/Sgm

Client: KNAUFDANOLINE
Kløvermarksvej 6
9500 Hobro
Dänemark

Order-No. (Client): -

Order-No. (MPA): 903 1569 000

Test Item: Ceiling lining „PLAZA S 24 Unity U 3“

Specification Applied: [1] DIN 18032-3:1997-04
Sport halls – Halls for gymnastics, games and multi purpose
use - Part 3: Testing of safety against ball throwing
[2] DIN EN 13964:2014-08
Suspended ceilings – Requirements and test methods
(Class 3A)

Date of Receipt of Test Item 06.06.2016

Date of Test: 13.06.2016

Date of Report: 27.06.2016

Page 1 of 3 text pages

Enclosures : 3

Supplements: 0

Total Number of Pages: 6

Number of Reports: 1 x KNAUFDANOLINE

The test results relate only to the items tested.

Publication of this report in full or partly is only allowed with written authorization by MPA University of Stuttgart.

1 Purpose of Investigation

With writing of 10.032016 you ordered the Materials Testing Institute University of Stuttgart with the testing of the safety against ball throwing on a ceiling liner according to DIN 18032-3 [1] and with the determination of the impact resistance according to DIN EN 13964 [2], annex D.

2 Description of the element tested

The element investigated was the ceiling lining

„PLAZA S 24 Unity U 3“

The element tested had the dimensions 1800 mm x 3000 mm and consisted of 12,5 mm thick gypsum plasterboards (square perforation 3,5 mm x 3,5 mm, perforation 17,2%).

The substructure was made of 0,4 mm thick T-shaped steel panel connection-profiles (38 mm x 24 mm). Those profiles were connected to each other in a modular grid with 1200 mm x 600 mm and 600 mm x 600 mm by a click-system. In this substructure, 12,5 mm thick gypsum plasterboards with dimensions of 600 mm x 600 mm were placed in. On the backside of the gypsum plasterboard an acoustic carded web was applied. Each of these plasterboards was secured on the backside by a hold down clip in the middle of each side of the board.

The elements were suspended by nonius hangers which were fixed in the substructure in a modular grid of 900 mm x 1200 mm.

3 Tests and Analyses Performed

The test was performed according to DIN 18032-3 [1] and DIN EN 13964 [2], annex D (accredited tests according to DIN EN ISO / IEC 17025, see DAkkS-certificate D-PL-11016-01-00).

The tests were performed in a laboratory at 22 °C.

4 Results of Investigation

Table 1: Results of determination of security against ball throwing according to DIN 18032-3 [1] on the ceiling lining „PLAZA S 24 Unity U 3“

Ball	Impact angle in degree	Number of tests	Deterioration of test item
Handball	90	12	none
Handball	60	12	
Handball	60	12	

5 Evaluation

The element tested was not damaged by the test performed.

Therefore the element can be evaluated as secure against ball throwing according to DIN 18032-3 [1] for the application on ceilings as well as resistant against impact according to DIN EN 13964 [2], annex D, class 3A (impact velocity $4,0 \pm 0,5$ m/s).

This document is valid till 27.06.2018.

If the manufacturer proves and the testing institute confirms that the element tested is furthermore produced and mounted without changes of relevant parts of the construction, the retest at the date mentioned is not necessary.

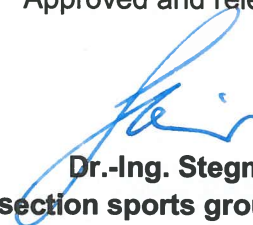
Prepared by



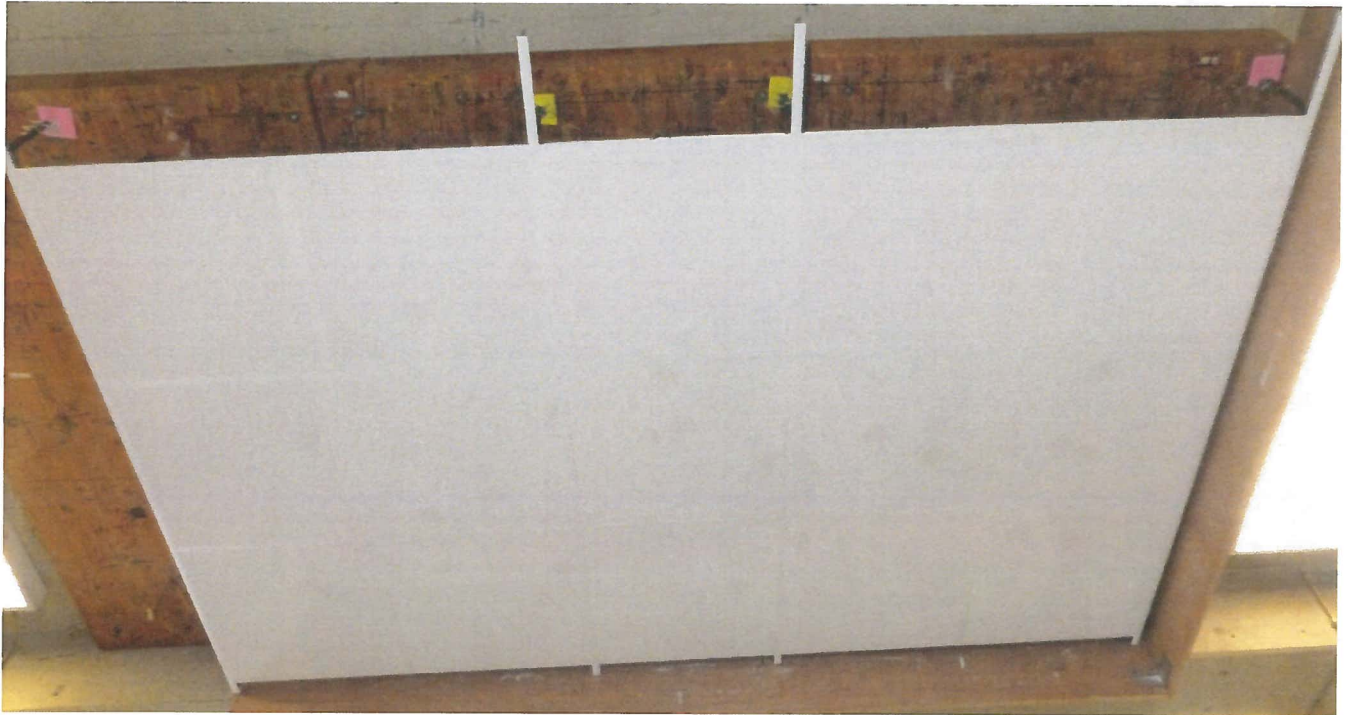
Manske
Testing Engineer



Approved and released by



Dr.-Ing. Stegmaier
Head of section sports grounds and facilities



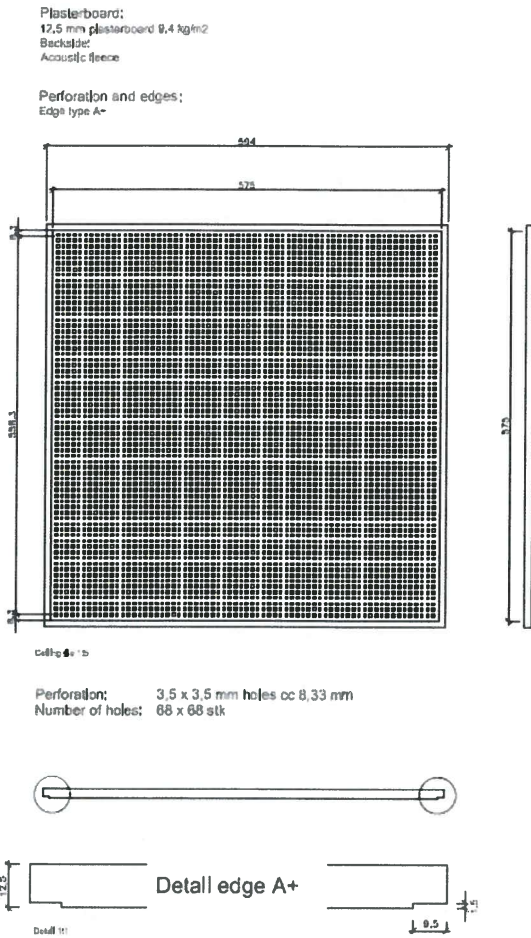
Picture 1
Overall view: visible face
„PLAZA S 24 Unity U 3“



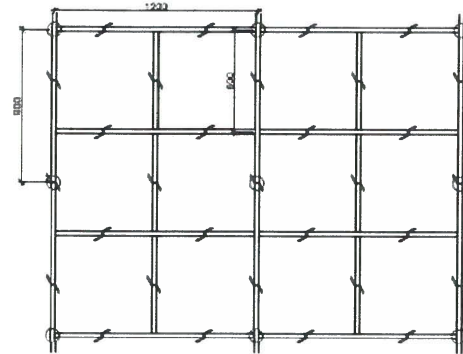


Picture 2
Detail: substructure
„PLAZA S 24 Unity U 3“





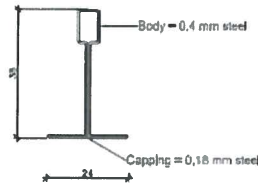
Profiles:
24 x 38 mm T-profiles



Celling lay out 120

○ = Nurlus hanger

⌘ = Hold down clip



Project	Plaza Unity 3	Draw. no.1	95-011-04
Subject	Construction in connection with bed in project area	Scale	1:1 / 1:5 / 1:20
		Date	21.09.2016
		Rev.	
Knauf Danoline AG - Gewerbestr. 11, D-40714 Hohen Tel: +49 (0)21 360-17-440 (0)21 360-1 www.danoline.com - info@danoline.com		Sign.	M.P.J.
		Project no.	
		T. No.	

Picture 3
Drawing of the ceiling lining
„PLAZA S 24 Unity U 3“

