

Test Report

Client: TOA Electronics Europe GmbH
Küblerstraße 18
85051 Ingolstadt

Order-No. (Client):

Order-No. (MPA): **901 5111 000-1/Sc/Kf**

Test Item: **Ball impact resistant loud speaker systems**

Specification Applied: DIN 18032-3:1997-04, Testing against ball throwing

Date of Receipt of Test Item 2008-02-28-

Date of Test: 2008-02-28

Date of Report: 2008-03-10

Page 1 of 3 text pages

Enclosures : 2

Supplements:

Total Number of Pages: 5

Number of Reports: 2 x Fa. TOA Electronics Europe GmbH
1 x original, 1 x copie

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

Testing of the safety of an installation element against ball throwing according to DIN 18032-3: 1997-04 "Sports halls, halls for gymnastics and games and multipurpose use: Testing of the safety against ball throwing".

2 Description of the installation element

The tested are loud speakers, type

TOA "HS-150W"

The dimensions of the tested device are 451 mm x 560 mm x 400 mm.

The housing exists of Polypropylen, with a varying thickness of 5 mm – 7 mm.

The front cover exists of a 1 mm perforated steel plate.

The loud speaker was mounted to the test ceiling with a 3,2 mm adjustable steel bracket (HY-1500 VB).

The steel bracket was screwed to the sides of the housing.

3 Testing procedure

The tests were carried out according to DIN 18032-3:1997-03 "Sports halls, halls for gymnastics and games and multipurpose use: Testing of the safety against ball throwing".

The procedures applied are accredited according to DIN EN ISO/IEC 17025:2005 (DAR-registration-no. DAP-PL-2907.07, annex).

The testing was run at normal temperature in the laboratory.

4 Test results

Table 1: Test results safety against ball throwing.

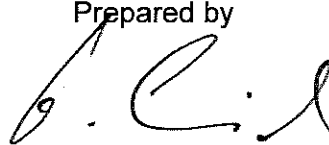
Ball	Angle of impact	No. of impacts	Changes in the element
Handball	90 °	30	none
Handball	45 °	12	
Handball	45 °	12	

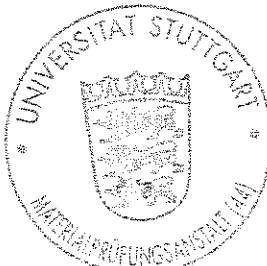
5 Evaluation

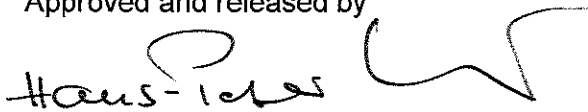
The tested element did not show signs of damage after the test. Therefore it is classified "safe against ball throwing according to DIN 18032-3:1997-04."

This test report is valid until 2010-03-10

A repetition test is only not necessary at that time if the client can prove that the tested construction has not been significantly changed and is installed without any changes. This has to be certified by the testing house.

Prepared by

Johannes Schmid
Tester



Approved and released by

Dipl.-Ing. Hans-Peter Knauf
Section leader „Sports floors, sports facilities“

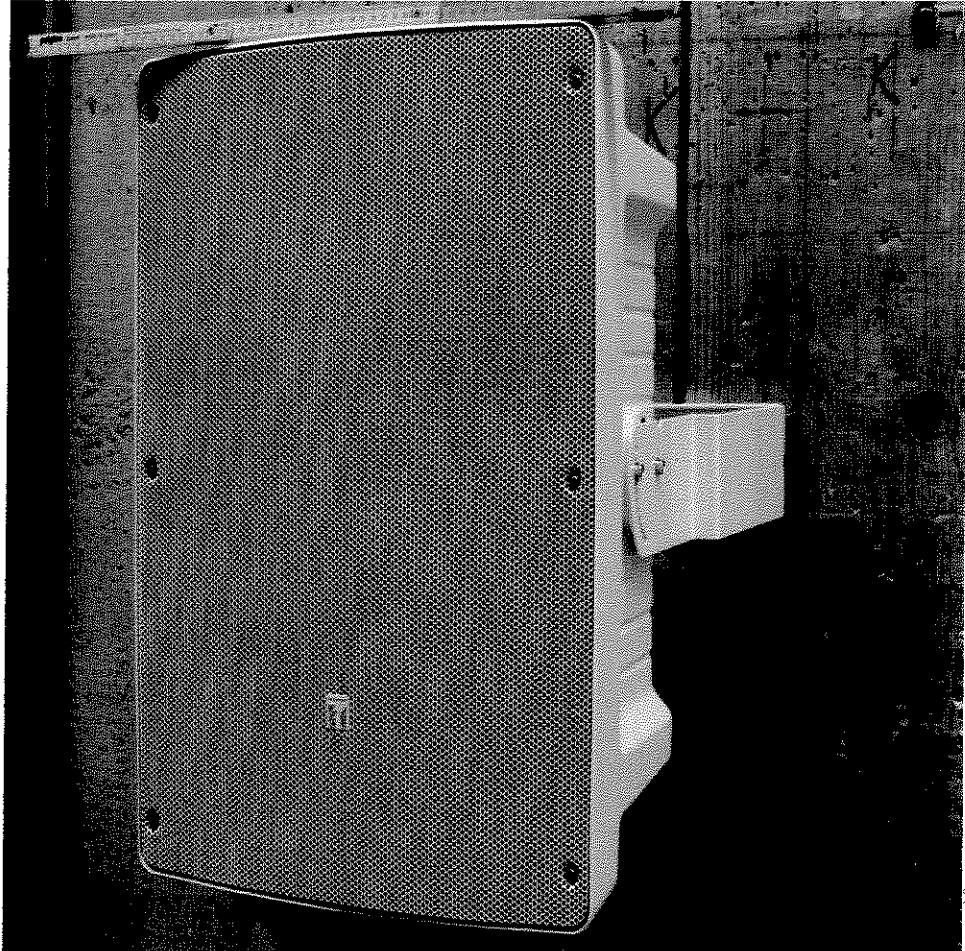
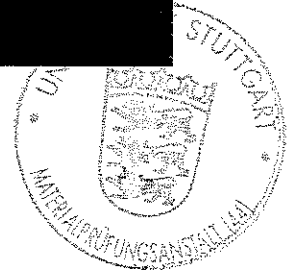


photo 1

complete view: loud speaker

TOA "HS-150W"



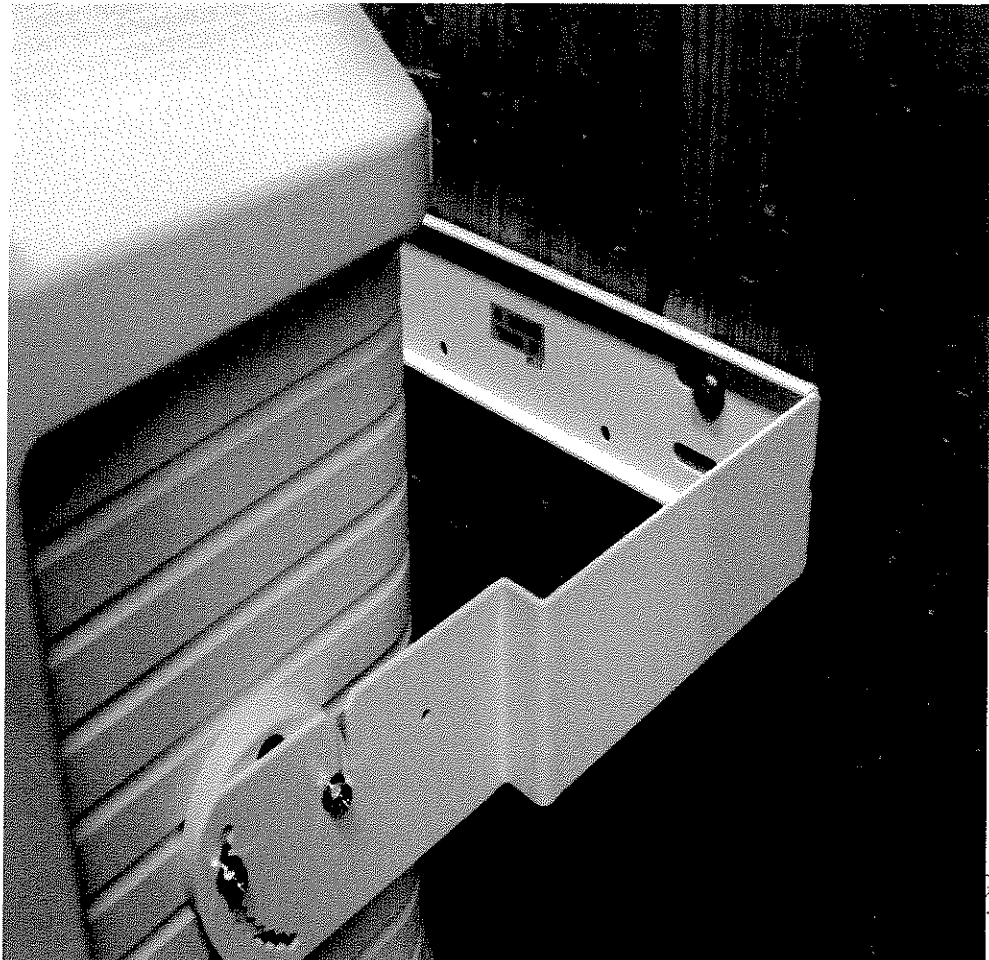


photo 2

side view: steel bracket

TOA "HS-150W"

