

The Formwork Experts.

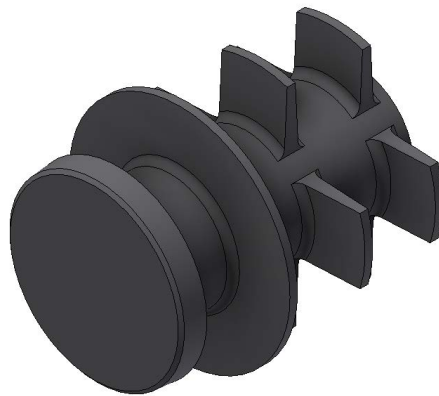
Monotec plug

Art.-Nr.: 588935000

Test Report

sound insulation

16-0005L



Influence of tie rod systems on the sound reduction of walls

Summary of test results and assessments based on test results

report number: 16-0005L
date: 2016-08-09
responsibility: R. Kainberger

Client: Doka GmbH
Josef Umdasch Platz 1, A-3300 Amstetten

Carried out by: TAS Bauphysik GmbH
Welserstraße 35 - 39, A-4060 Leonding

Based on: "Bauakustischer Prüfbericht" no. 25225/2016 from 2016-07-26
documented by:



Bautechnisches Institut GmbH
Karl Leitl-Straße 2
4048 Puchenu bei Linz



Topic: Sound insulation according EN ISO 10140-2

Relevant standards: EN ISO 717, part 1, "Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulations" (ISO 717-1:2013); 15-6-2013

EN ISO 10140, part 1, "Laboratory measurement of sound insulation building elements - Part 1: Application rules for specific products - Amendment 2: Rainfall sound" (ISO 10140-1: 2010 + Amd2:2014) (consolidated version); 15-9-2014

EN ISO 10140, part 2, "Acoustics - Laboratory measurements of sound insulation building elements - Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010), 15-11-2010

EN ISO 10140, part 4, "Acoustics - Laboratory measurement of sound insulation building elements - Part 4: Measurement procedures and requirements" (ISO 10140-4:2010), 15-11-2010

EN ISO 10140, part 5, "Acoustics - Laboratory measurement of sound insulation building elements - Part 5: Requirements for test facilities and equipment - Amendment 1: Rainfall sound" (ISO 10140-5:2010 + Amd1:2014) (consolidated version); 1-9-2014

EN ISO 3382, part 2, "Acoustics - Measurement of room acoustic parameters - Part 2: Reverberation time in ordinary rooms" (ISO 3382-2:2008 + Cor 1:2009) (consolidated version); 15-8-2009

The Summary consists of 1 page and 24 pages of various designs.
The scope is limited to these constructions and designs.

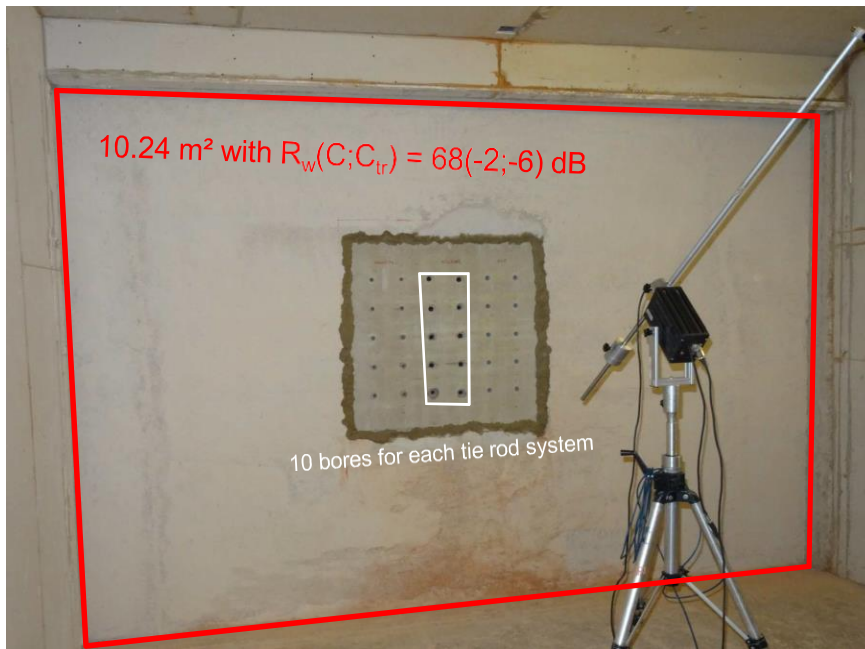
1 REPORT

Laboratory measurement of sound insulation acc. EN ISO 10140-2

Report No. BTI: 25225
from: 2016-07-26
Measurement No.: L00 und L6

BTI Karl Leitl-Straße 2
A-4048 Puchenu bei Linz
BAUTECHNISCHES
INSTITUT GMBH www.bti.at

2 TEST SET UP



Test wall with 10.24 m²:

The test wall is a brick wall combined with a plasterboard construction which has a sound insulation of

$R_w(C;C_{tr}) = 68(-2;-6)$ dB
(without influence of tie rods).

In this wall a 25 cm thick concrete element (size 1 m²) was installed which had 10 prepared bores for each tie rod system.

The measurements were always performed with 10 tie rods which is equivalent to **1 tie rod per m² of wall.**

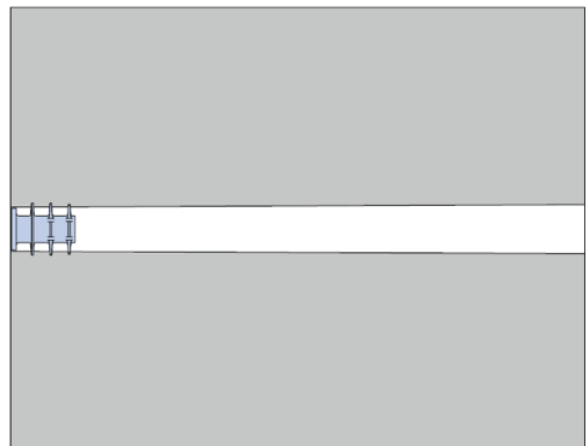
3 TESTED TIE ROD SYSTEM

MONOTEC

plug
closed on one side (noise exposed side)

Influence of tie rod system:

from $R_w(C;C_{tr}) = 68(-1;-5)$ dB
to $R_w(C;C_{tr}) = 59(-1;-1)$ dB
based on 1 tie rod / 1 m² wall



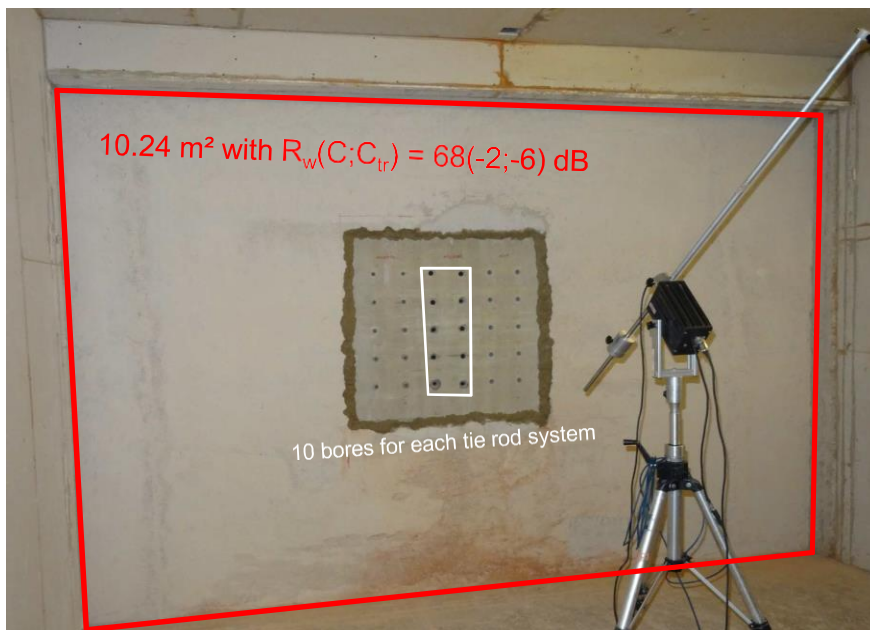
1 REPORT

Laboratory measurement of sound insulation acc. EN ISO 10140-2

Report No. BTI: 25225
from: 2016-07-26
Measurement No.: L00 und L7

BTI Karl Leitl-Straße 2
A-4048 Puchenu bei Linz
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2 TEST SET UP



Test wall with 10.24 m²:

The test wall is a brick wall combined with a plasterboard construction which has a sound insulation of

$R_w(C;C_{tr}) = 68(-2;-6)$ dB
(without influence of tie rods).

In this wall a 25 cm thick concrete element (size 1 m²) was installed which had 10 prepared bores for each tie rod system.

The measurements were always performed with 10 tie rods which is equivalent to **1 tie rod per m² of wall.**

3 TESTED TIE ROD SYSTEM

MONOTEC

plug
closed on both sides

Influence of tie rod system:

from $R_w(C;C_{tr}) = 68(-1;-5)$ dB

to $R_w(C;C_{tr}) = 68(-1;-5)$ dB

based on 1 tie rod / 1 m² wall



that means there is no influence of the tie rod system on the sound reduction of the wall