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Evaluation Report for the assessment of

Nazwa handlowa

Trade name

SWAL

Właściciel oceny

Holder of assessment

SWAL Tomasz Żebrowski

**ul. Działkowa 2
02-234 Warszawa
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Rodzaj i przeznaczenie wyrobu

*Generic type and use
of construction products*

Wkręty do mocowania płyt warstwowych

Fastening screws for sandwich panels

Niniejszy Raport zawiera

This Evaluation Report contains

3 strony

3 pages

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1. General

The fastening screws for sandwich panels SWAL are a self-drilling and self-tapping screws listed in Table 1. Screws are completed with washer and an EPDM sealing ring. For details see the Annexes 2 to 90 of the ETA draft. All screws can be completed with additional saddle washers (K or S), LAX cap, WELRO cap or WELRO-XL cap (Annexes 91 and 92 of the ETA draft).

The fastening screw for sandwich panels and the corresponding connections are subject to tension and shear forces.

Table 1

No.	Screw	Material	Annex of the draft ETA
1	IMPACT-R 6 5,5/6,3 x L	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm) or ceramic coating DACRO500 or ceramic coating DACRO1000	2 – 14
2	IMPACT-R 14 5,5/6,3 x L		15 – 27
3	IMPACT-R 14+ 5,5/6,3 x L		28 – 40
4	IMPACT-S 5 5,5/6,3 x L	stainless steel – SAE304	41 – 53
5	IMPACT-S 12 5,5/6,3 x L		54 – 66
6	VCAT 6,3/7,0 x L	carbon steel, SAE1022, quenched, tempered and galvanized and additionally protected by ceramic coating DACRO1000	67 – 78
7	TAP A 6,3 x L	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm) or ceramic coating DACRO500 or ceramic coating DACRO1000	79 – 90

2. Reference documents

- [1] EAD 330047-01-0602
- [2] LZK00-03291/19/Z00NZK. Test report. ITB Department of Building Construction Elements, Geotechnics and Concrete, Katowice, Poland, 2020
- [3] LOK01-2792/14/Z00OSK. Test report. ITB Department of Building Structures and Construction Elements in Mining Areas, Katowice, Poland, 2015

3. Intended use

The fastening screws for sandwich panels are intended to be used for fastening sandwich panels to metal or timber substructures. The sandwich panel can either be used as wall or roof cladding or as load bearing wall and roof element. For details see the Annexes 2 to 90 of the draft ETA. The intended use comprises fastening screws and connections for indoor and outdoor applications. Fastening screws which are intended to be used in external environments with \geq C2 corrosion according to the standard EN ISO 12944-2 are made of stainless steel.

4. Methods of verification

The assessment of the products has been made in accordance with EAD 330047-01-0602.

5. Determination of the characteristic and design values of resistance of the connections

5.1. Characteristic values of tension and shear resistance

In order to determine the characteristic values of the tension resistance $N_{R,k}$ and the shear resistance $V_{R,k}$ of the connections tests according to [1] were carried out. The test results are given in [2], [3] and in Annexes of the draft ETA.

5.2. Design values of tension and shear resistance

The design values shall be determined according to Annex 93 of the draft ETA and EAD 330047-01-0602.

5.3. Design resistance in case of combined tension and shear forces

In case of combined tension forces and shear forces the design values shall be determined according to Annex 93 of the draft ETA and EAD 330047-01-0602.

6. Reaction to fire

The steel fastening screws are considered to satisfy the requirements of performance class A1 of reaction to fire, in accordance with the provisions of the EC Decision 96/603/EC (as amended) without the need for testing on the basis of its listing in that decision.

7. Durability

For the corrosion protection the rules given in EN 1993-1-3, EN 1993-1-4 and EN 1999-1-4 shall be taken into account. Due to the fact that only the rim of the EPDM sealing ring might be exposed to ageing media, the EPDM sealing ring ensures adequate durability for the intended working life.

8. Identification

The dimensions and tolerances as well as the material properties and chemical composition of the metal components of the fastening screws are deposited at the Instytut Techniki Budowlanej.

On behalf of Instytut Techniki Budowlanej



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