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European Assessment Document for

Internal doorsets without resistance to fire and smoke control characteristics made of metal profiles

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This European Assessment Document (EAD) has been developed taking into account up-to-date technical and scientific knowledge at the time of issue and is published in accordance with the relevant provisions of Regulation (EU) 305/2011 as a basis for the preparation and issuing of European Technical Assessments (ETA).

Contents

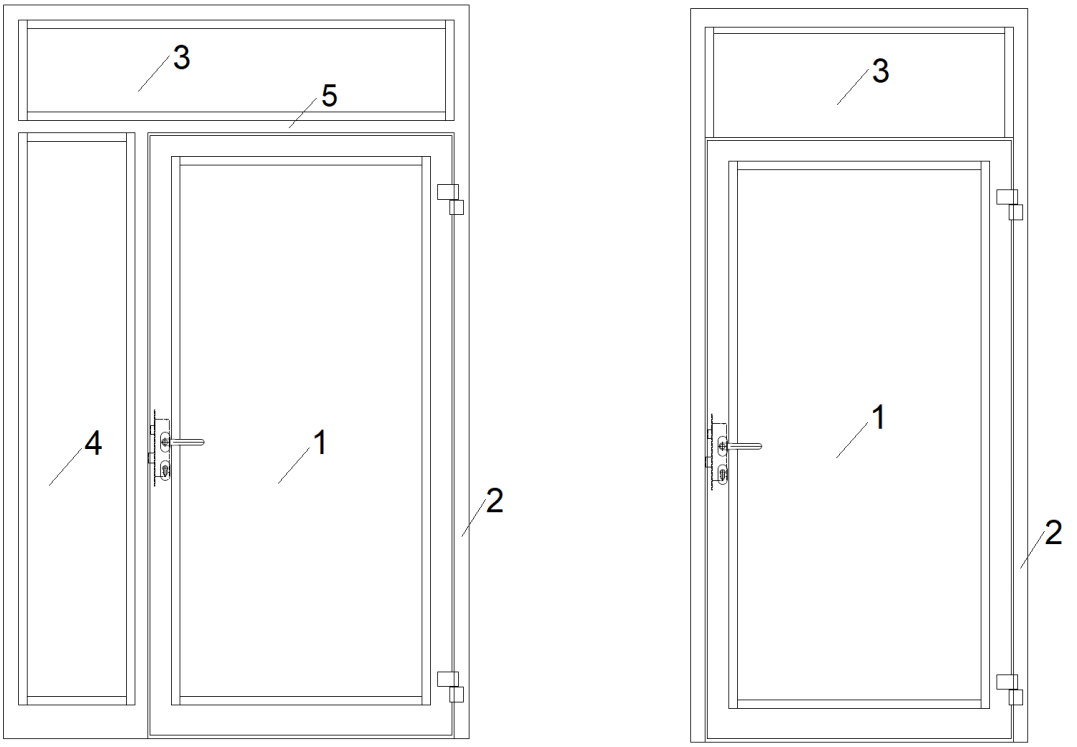
1 SCOPE OF THE EAD

1.1 Description of the construction product

This EAD applies to internal doorsets without resistance to fire and smoke control characteristics made of metal profiles (in the following referred to as “internal doorsets“).

The internal doorsets are manually operated, single or double leaf side-hung doors, with safety glass panes (glazed doorsets) or opaque panels, building hardware and three-sided sealing (with gaskets placed in the door frame along vertical and upper horizontal edges) or four-sided sealing (with gaskets placed in the door frame along vertical and upper horizontal edges and with gasket along bottom edge of the door).

The internal doorsets are produced as pedestrian doorsets, with or without side panel(s), flush over panel(s) and/or transom panel(s), contained within a single frame for inclusion in a single aperture. The infills of the door leaf(s) and side panel(s), flush over panel(s) and/or transom panel(s) are made of the same material. The infills are mounted in the metal frame of the door leaf(s), side panel(s), flush over panel(s) and/or transom panel(s) in the same way. The internal doorsets scheme and their elements are given in Figure 1.1.1.



1 – door leaf
2 – door frame
3 – transom panel
4 – side panel
5 – transom

1 – door leaf
2 – door frame
3 – flush over panel

Figure 1.1.1. The internal doorsets scheme and their elements

The product is not covered by a harmonised European standard (hEN).

The internal doorsets are covered by EN 14351-2[1] which is not a harmonised European standard.

1 All undated references to standards in this EAD are to be understood as references to the dated versions listed in chapter 4.

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise his clients on the transport, storage, maintenance, replacement and repair of the product as he considers necessary.

It is assumed that the product will be installed according to the manufacturer's instructions or (in absence of such instructions) according to the usual practice of the building professionals.

Relevant manufacturer's stipulations, e.g., with regard to the intended end use conditions, having influence on the performance of the product covered by this European Assessment Document shall be considered for the determination of the performance and detailed in the ETA as long as the details of the assessment methods as laid down in this EAD are respected.

1.2 Information on the intended use(s) of the construction product

1.2.1 Intended use(s)

The internal doorsets without resistance to fire and smoke control characteristics made of metal profiles are intended to be used as internal pedestrian doorsets, without specific requirements regarding resistance to fire and smoke control.

The internal doorsets are not intended to be used on escape routes.

1.2.2 Working life/Durability

The assessment methods included or referred to in this EAD have been written based on the manufacturer's request to take into account a working life of the internal doorsets for the intended use of 25 years when installed in the works. These provisions are based upon the current state of the art and the available knowledge and experience.

When assessing the product, the intended use as foreseen by the manufacturer shall be taken into account. The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works[2].

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by EOTA when drafting this EAD nor by the Technical Assessment Body issuing an ETA based on this EAD, but are regarded only as a means for expressing the expected economically reasonable working life of the product.

[2] The real working life of a product incorporated in a specific works depends on the environmental conditions to which that works is subject, as well as on the particular conditions of the design, execution, use and maintenance of that works. Therefore, it cannot be excluded that in certain cases the real working life of the product may also be shorter than referred to above.

2 ESSENTIAL CHARACTERISTICS AND RELEVANT ASSESSMENT METHODS AND CRITERIA

2.1 Essential characteristics of the product

Table 2.1.1 shows how the performance of the internal doorsets is assessed in relation to the essential characteristics.

Table 2.1.1 Essential characteristics of the product and methods and criteria for assessing the performance of the product in relation to those essential characteristics

No	Essential characteristic	Assessment method	Type of expression of product performance
Basic Works Requirement 2: Safety in case of fire			
1	Reaction to fire	2.2.1	class
Basic Works Requirement 3: Hygiene, health and the environment			
2	Content, emission and/or release of dangerous substances	2.2.2	level
3	Air permeability	2.2.3	class
Basic Works Requirement 4: Safety and accessibility in use			
4	Manual operating forces	2.2.4	class
5	Impact resistance of glazed doorset with injury risk	2.2.5	class
6	Mechanical strength	2.2.6	class
7	Resistance to repeated opening and closing	2.2.7	class
Basic Works Requirement 5: Protection against noise			
8	Direct airborne sound insulation index	2.2.8	level
Basic Works Requirement 6: Energy economy and heat retention			
9	Thermal transmittance	2.2.9	level

2.2 Methods and criteria for assessing the performance of the product in relation to essential characteristics of the product

This chapter is intended to provide instructions for TABs. Therefore, the use of wordings such as “shall be stated in the ETA” or “it has to be given in the ETA” shall be understood only as such instructions for TABs on how results of assessments shall be presented in the ETA. Such wordings do not impose any obligations for the manufacturer and the TAB shall not carry out the assessment of the performance in relation to a given essential characteristic when the manufacturer does not wish to declare this performance in the Declaration of Performance.

In case of test methods mentioned in Clauses 2.2.3 to 2.2.9, field of direct application of test results shall be in accordance with Annex B of EN 14351-2.

2.2.1 Reaction to fire

The internal doorsets and/or their components shall be tested, using the method(s) relevant for the corresponding reaction to fire class according to EN 13501-1. The internal doorsets and/or their components shall be classified according to the Commission Delegated Regulation (EU) No 2016/364 in connection with EN 13501-1.

The relevant components are:

- metal profiles with or without relevant coating;
- infills (e.g., glazing, panels, sheeting);
- sealant and gasket between infill and profile.

The components made of metal, glass or other materials not containing more than 1,0 % by weight or volume (whichever is the more onerous) of homogeneously distributed organic material are considered to satisfy the requirements of class A1 of the reaction to fire performance in accordance with the Commission Decision 96/603/EC as amended by Commission Decisions 2000/605/EC and 2003/424/EC without the need for testing on the basis of it fulfilling the conditions set out in that Decision and its intended use being covered by that Decision.

Reaction to fire of internal doorsets and their components shall be tested according to Annex F of EN 14351-2. The way of assessment of reaction to fire of internal doorsets on the basis of reaction to fire of the components shall be in accordance with Clause 4.5.2 of EN 14351-2.

Selection, preparation, mounting and fixing of test specimens and field of direct application shall be in accordance with Annex F of EN 14351-2.

Hardware components and gasket between frame and door leaf are not a relevant component due to negligible influence for reaction to fire performance (compression of the gasket and overlapping of the rebate).

Components covered by a harmonised standard (e.g., glass products) for which the performance is indicated in their declaration of performance do not need to be re-tested.

Reaction to fire class of internal doorsets and their components shall be stated in the ETA.

2.2.2 Content, emission and/or release of dangerous substances

The performance of the product regarding the emissions and/or release and, where appropriate, the content of dangerous substances will be assessed on the basis of the information provided by the manufacturer[3]

[3] The manufacturer may be asked to provide to the TAB the REACH related information which shall accompany the DoP (cf. Article 6(5) of Regulation (EU) No 305/2011).

The manufacturer is **not** obliged to:
- provide the chemical constitution and composition of the product (or of constituents of the product) to the TAB, or
- provide a written declaration to the TAB stating whether the product (or constituents of the product) contain(s) substances which are classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the

after identifying the release scenarios taking into account the intended use(s) of the product and the Member States where the manufacturer intends his product to be made available on the market.

The identified intended release scenarios for this product and intended use with respect to dangerous substances is:

IA1: Product with direct contact to indoor air

2.2.2.1 SVOC and VOC

For the intended use covered by the release scenario IA1 semi-volatile organic compounds (SVOC) and volatile organic compounds (VOC) shall be determined in accordance with EN 16516.
The respective loading factor L used for emission testing in accordance with EN 16516 shall be 0,05 m^2/m^3.

One specimen for each type of the internal doorsets shall be tested. The surface area of individual components of the specimen shall be proportional to the actual surface area of the components used in the internal doorsets.

The relevant product performance shall be stated in the ETA in $\mu g/m^3$ or mg/m^3.

2.2.3 Air permeability

Air permeability shall be tested according to EN 1026 and classified according to EN 12207. Test shall be performed on one specimen for each type of the internal doorsets, separately for internal doorsets with three- and four-sided sealing. Two air permeability tests shall be carried out in accordance with EN 1026, one with the positive test pressures and one with the negative test pressures.

Class according to EN 12207 shall be stated in the ETA.

2.2.4 Manual operating forces

Manual operating forces shall be tested according to EN 12046-2 and classified according to EN 12217. Test shall be performed on one specimen for each type of the internal doorsets.

Class according to EN 12217 shall be stated in the ETA.

2.2.5 Impact resistance of glazed internal doorsets with injury risk

Impact resistance of glazed internal doorsets with injury risk is the ability of the product to keep in place glazed parts. Impact resistance shall be tested and classified according to EN 13049. Test shall be performed on one specimen – internal doorset with the minimum infill dimensions (with area not less than 0,2 m^2). If the infill of side panel is of smaller dimensions than the leaf infill (but with area not less than 0,2 m^2) it shall also be tested. The impact shall be made in the direction of door closing. For some uses (e.g., asymmetric structure), the test shall be carried out from both sides.

Class according to EN 13049 shall be stated in the ETA.

"Indicative list on dangerous substances" of the SGDS, taking into account the installation conditions of the construction product and the release scenarios resulting from there.

Any information provided by the manufacturer regarding the chemical composition of the products is not to be distributed to EOTA to other TABs or beyond.

2.2.6 Mechanical strength

Mechanical strength, including vertical load, static torsion and impact resistance, shall be tested according to EN 947, EN 948, EN 949 and EN 950 and classified according to EN 1192. One specimen for each type of the leaf infill and weakest configuration of metal profiles shall be tested.

Class according to EN 1192 shall be stated in the ETA.

2.2.7 Resistance to repeated opening and closing

Resistance to repeated opening and closing shall be tested according to EN 1191 and classified according to EN 12400. Test shall be performed on one specimen for each type of the internal doorsets.

Class according to EN 12400 shall be stated in the ETA.

2.2.8 Direct airborne sound insulation index

The acoustic performance shall be tested according to EN ISO 10140-1 and EN ISO 10140-2 and expressed in accordance with EN ISO 717-1. Test shall be performed on one specimen for each type of the internal doorsets.

Weighted sound reduction index and the spectrum adaptation terms R_w (C; C_{tr}) shall be stated in the ETA.

2.2.9 Thermal transmittance

Thermal transmittance shall be determined by tests according to EN ISO 12567-1 (reference method) or calculations according to EN ISO 10077-1. In case of testing, test specimen according to EN ISO 12567-1, Clause 5.3, shall be mounted inside the surround panel according to Figure 2 of Clause 4 of EN ISO 12567-1. Test shall be performed on one specimen for each type of the internal doorsets.

Thermal transmittance shall be stated in the ETA.

3 ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE

3.1 System(s) of assessment and verification of constancy of performance to be applied

For the products covered by this EAD the applicable European legal act is Commission Decision 1999/93/EC, as amended by Commission Decision 2011/246/EU.

The system is:

3 for uses subject to other specific requirements than fire/smoke compartmentation or escape routes, in particular noise, energy, tightness and safety-in-use, or

4 for internal communication only.

3.2 Tasks of the manufacturer

The cornerstones of the actions to be undertaken by the manufacturer of the product in the procedure of assessment and verification of constancy of performance are laid down in Table 3.2.1.

Table 3.2.1 Control plan for the manufacturer; cornerstones

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC) [including testing of samples taken at the factory in accordance with a prescribed test plan]					
1	Incoming materials and components	According to delivery documents	According to Control Plan	100 %	Each delivery
2	Dimensions and tolerances	Measurement	Compliance with documentation	According to Control Plan	Once per production batch
3	Assembly of product	According to Control Plan	According to Control Plan	According to Control Plan	Each product
4	Manual operating forces	EN 12046-2	According to Control Plan	1	Once per five years
5	Impact resistance	EN 13049	According to Control Plan	1	Once per five years
6	Mechanical strength	EN 947, EN 948, EN 949 and EN 950	According to Control Plan	1	Once per five years

4 REFERENCE DOCUMENTS

EN 947:1998	Hinged or pivoted doors - Determination of the resistance to vertical load
EN 948:1999	Hinged or pivoted doors - Determination of the resistance to static torsion
EN 949:1998	Windows and curtain walling, doors, blinds and shutters - Determination of the resistance to soft and heavy body impact for doors
EN 950:1999	Door leaves - Determination of the resistance to hard body impact
EN 1026:2016	Windows and doors - Air permeability - Test method
EN 1191:2012	Windows and doors - Resistance to repeated opening and closing - Test method
EN 1192:1999	Doors - Classification of strength requirements
EN 12046-2:2000	Operating forces - Test method - Part 2: Doors
EN 12207:1999	Windows and doors - Air permeability - Classification
EN 12217:2015	Doors - Operating forces - Requirements and classification
EN 12400:2002	Windows and pedestrian doors - Mechanical durability - Requirements and classification
EN 13049:2023	Windows and doors - Soft and heavy body impact - Test method, safety requirements and classification
EN 13501-1:2018	Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests
EN 14351-2:2018	Windows and doors - Product standard, performance characteristics - Part 2: Internal pedestrian doorsets
EN 16516:2017+A1:2020	Construction products - Assessment of release of dangerous substances - Determination of emissions into indoor air
EN ISO 717-1:2020	Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation (ISO 717-1:2020)
EN ISO 10077-1:2017	Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - Part 1: General (ISO 10077-1:2017)
EN ISO 10140-1:2021	Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Application rules for specific products (ISO 10140-1:2021)
EN ISO 10140-2:2021	Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation (ISO 10140-2:2021)
EN ISO 12567-1:2010	Thermal performance of windows and doors - Determination of thermal transmittance by the hot-box method - Part 1: Complete windows and doors (ISO 12567-1:2010)
EN ISO 12567-1:2010/AC:2010	Thermal performance of windows and doors - Determination of thermal transmittance by the hot-box method - Part 1: Complete windows and doors - Technical Corrigendum 1 (ISO 12567-1:2010/Cor 1:2010)