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**Obešene fasade - Ugotavljanje trdnosti strižnih spojev - Preskusna metoda in zahteve**

Curtain walling - Determination of the strength of sheared connections - Test method and requirements

Vorhangfassaden - Bestimmung der Beanspruchbarkeit von auf Abscheren beanspruchten Verbindungen - Prüfverfahren und Anforderungen

Façades rideaux - Détermination de la résistance des assemblages - Méthode d'essai et exigences

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**Ta slovenski standard je istoveten z: prEN 16758**

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**ICS:**

91.060.10	Stene. Predelne stene. Fasade	Walls. Partitions. Facades
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**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 16758**

January 2020

ICS 91.060.10

Will supersede EN 16758:2016

English Version

## Curtain walling - Determination of the strength of sheared connections - Test method and requirements

Façades rideaux - Détermination de la résistance des assemblages - Méthode d'essai et exigences

Vorhangfassaden - Bestimmung der Beanspruchbarkeit von auf Abscheren beanspruchten Verbindungen - Prüfverfahren und Anforderungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 33.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (prEN 16758:2020) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 16758:2016.

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## 1 Scope

This document specifies test methods for the determination of bearing capacity (ultimate limit state and serviceability limit state), of connections between curtain walling framing members for which it cannot be calculated in accordance with current codes or conventional calculations based upon the strength of the materials.

Mechanical performances of the curtain walling connections are already assessed in accordance with the provisions described in EN 13830. Additional information with respect to mechanical performance of the connections and direct applications can be determined with this document.

## 2 Normative references

The following documents are referred to in the text in such a way that some of all of their contents constitute requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13119, *Curtain walling — Terminology*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13119 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1 connection

set of components designed to transfer loads between framing members (e.g. cleat, screw)

## 4 Symbols and abbreviations

For the purposes of this document, the following symbols apply.

$a$	Total height of the sample
$a_1, a_2$	Partial height of the sample
$b$	Distance between the centre of gravity axis of the mullion
$c_w$	Elasticity constant
$d$	Distance between the vertical forces applied on the transom
$c_h$	Distance between the centre of gravity axis of the mullion and the horizontal forces
$c_v$	Distance between the centre of gravity axis of the mullion and the vertical forces
$DT$	Transducer
$e$	Distance from the position of ( $\alpha$ ) the contact area between the internal infill gasket and the transom, and the vertical plane containing the centre of the gravity of the infill
$f_{ave,ela}$	Average of deflection glass support by $F_{ave,ela}$
$F_{ave}$	Average force
$F_{ave,ela}$	Maximum average elastic force corresponding to the maximum deformation of the elastic part of the graph (forces $F$ , deformation $\epsilon$ )

$F_{des,s}$	Design force at the service limit state
$F_{h,des}$	Design horizontal load
$F_{max,i}$	Maximum force at ultimate limit state for the sample "i"
$F_{des,u}$	Design force at the ultimate limit state
$F_{v,des}$	Design vertical load
$F_{u,5}$	Characteristic force giving 75 % confidence that 95 % of the test results will be higher than this value
$F_{u,5,s}$	characteristic force at the service limits state
$F_h$	Horizontal force
$F_v$	Vertical force
$g$	Distance between the edge of the infill and edge of the setting block
$p$	Maximum thickness of the infill panel, also measurement reference point for the infill support deflection
$S$	Sample restrains
$s_{dev}$	Standard deviation of the series under consideration
$ULS$	Ultimate Limit State
$w$	Deflection of the glass support
$\gamma_u$	partial factor for the connection applicable to rupture
$\tau_{\alpha\beta}$	Statistical eccentricity of 5 % with 75 % confidence

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## 5 Method of evaluation

### 5.1 General

Connections are subjected to permanent loads as well as to variable loads. The measurement of the deformation is recorded at the application of the force unless indicated on the figures with the position of the transducers (DT). The support shall restraint vertical and horizontal movements. When using an infill panel to apply the forces:

- care shall be taken to avoid friction between the infill panel and the mullion(s);
- no vertical setting block should be used between the infill and the mullion(s);
- the infill should be rigid enough to avoid web buckling;
- the frame of the test bench shall be rigid enough not to introduce inaccuracies when recording the prototype deformation.

### 5.2 Samples

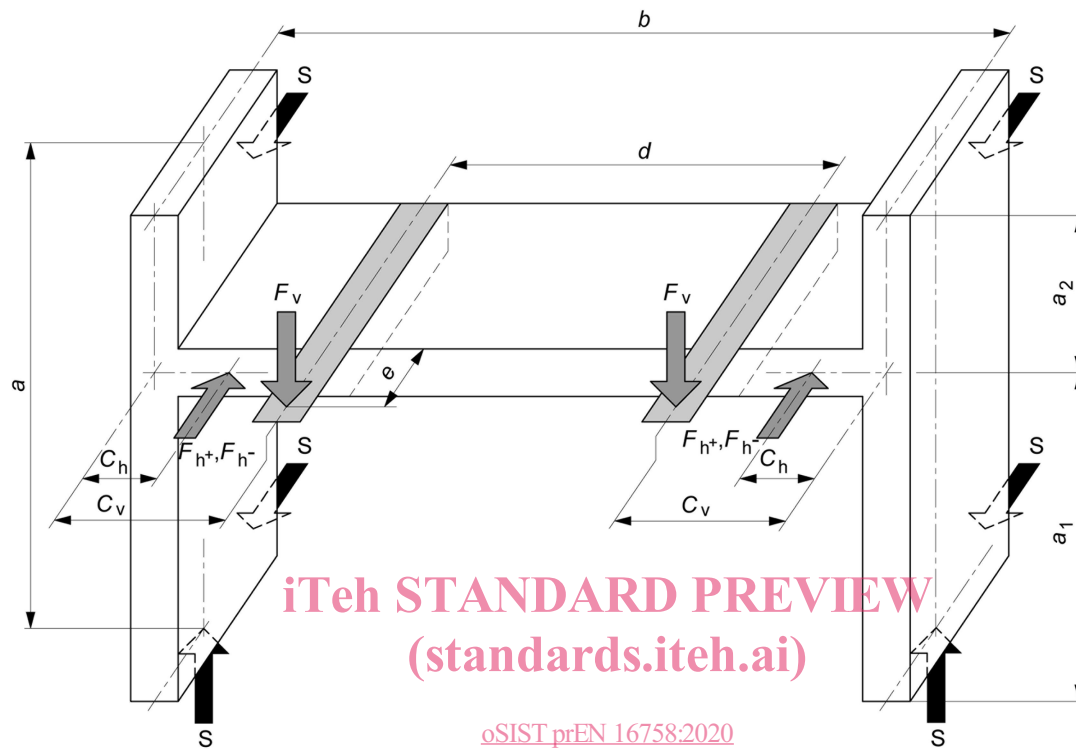
The samples shall be representative of the connection methods between the framing members of the curtain walling.

Based on the type of curtain walling (e.g. stick construction, unitized system etc.), different types of connection between the framing members should be tested, depending upon the design of the connection.

Figures 1 to 3 are examples of typical test configurations, but different configurations may be used.

The sample restrains “S” given in the Figures 1 to 3 are given as an indication. They should be designed in such way that only that the recorded data during the tests are limited to behaviour of the connection.

Figures 4 to 7 are examples of typical test configurations incorporating actual glass supports.



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**Figure 1 — Schematic T-connection and loading point (any connection method can be chosen)**

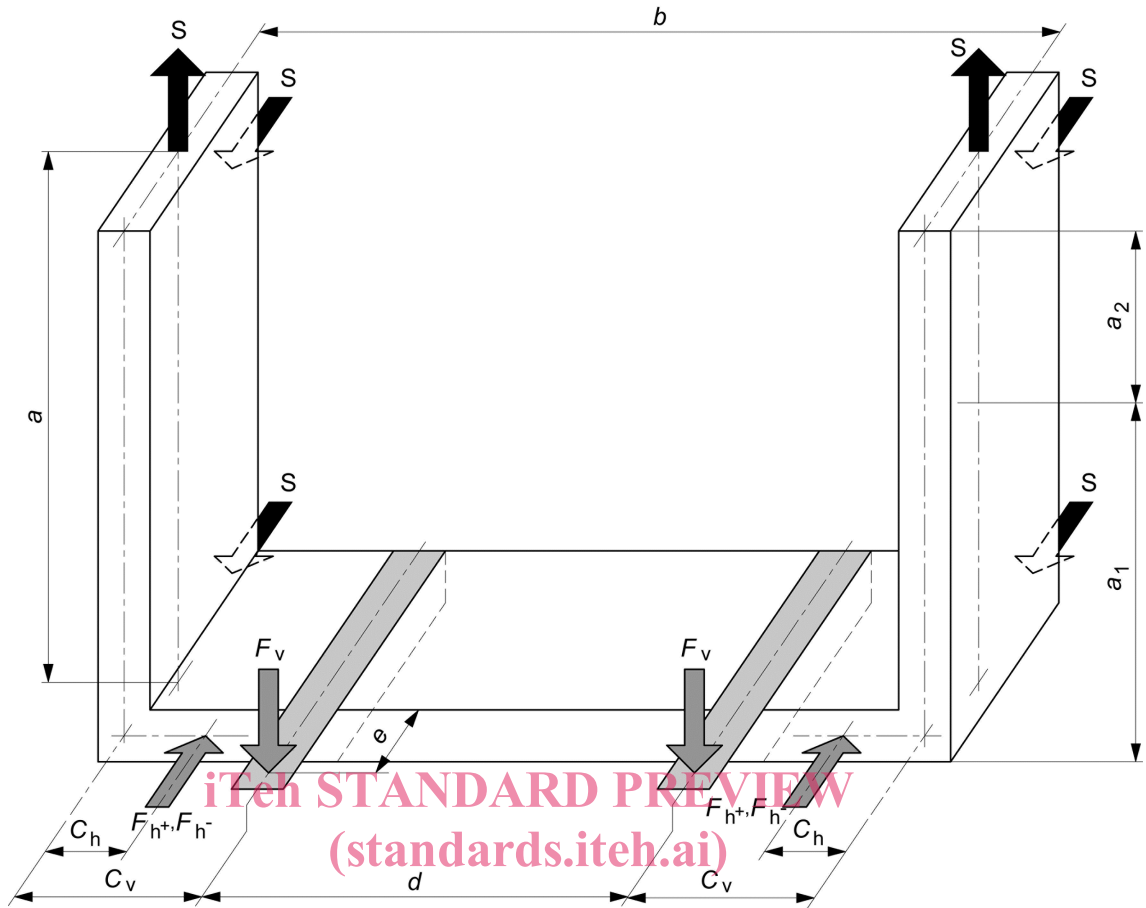


Figure 2 — Schematic L-connection and loading points (any connection method can be chosen)

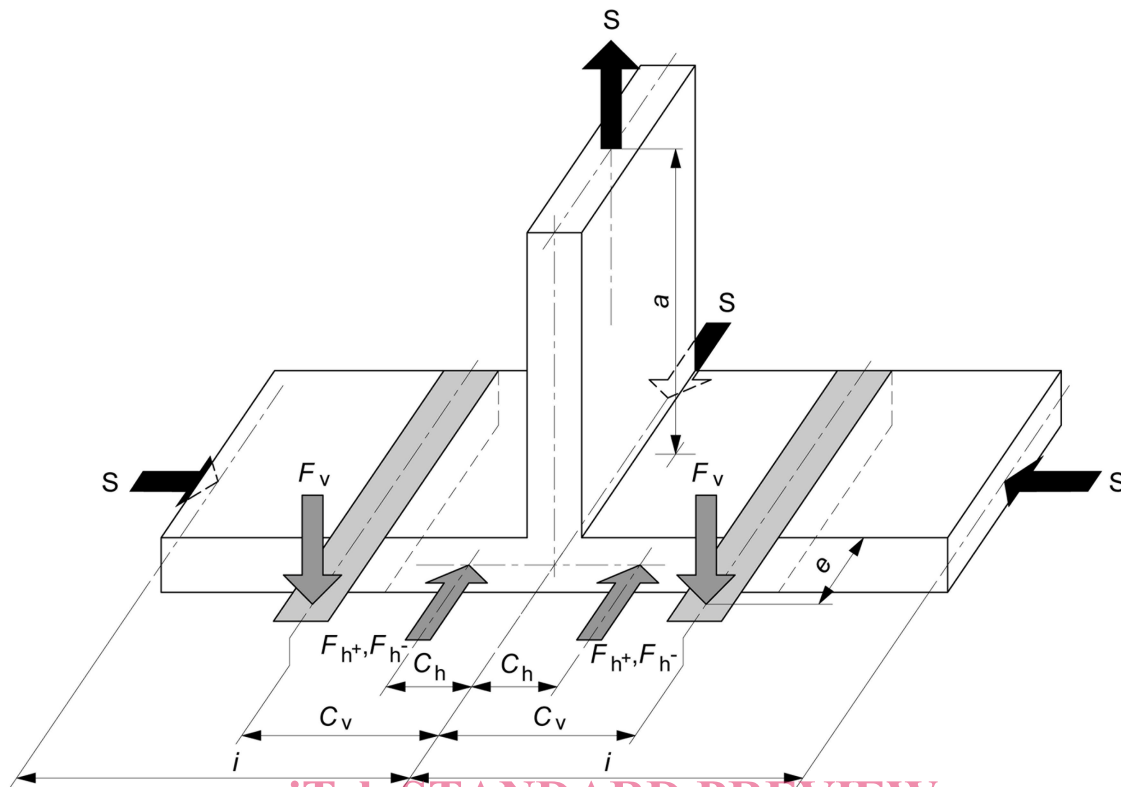


Figure 3 — Axial resistance (any connection method can be chosen)

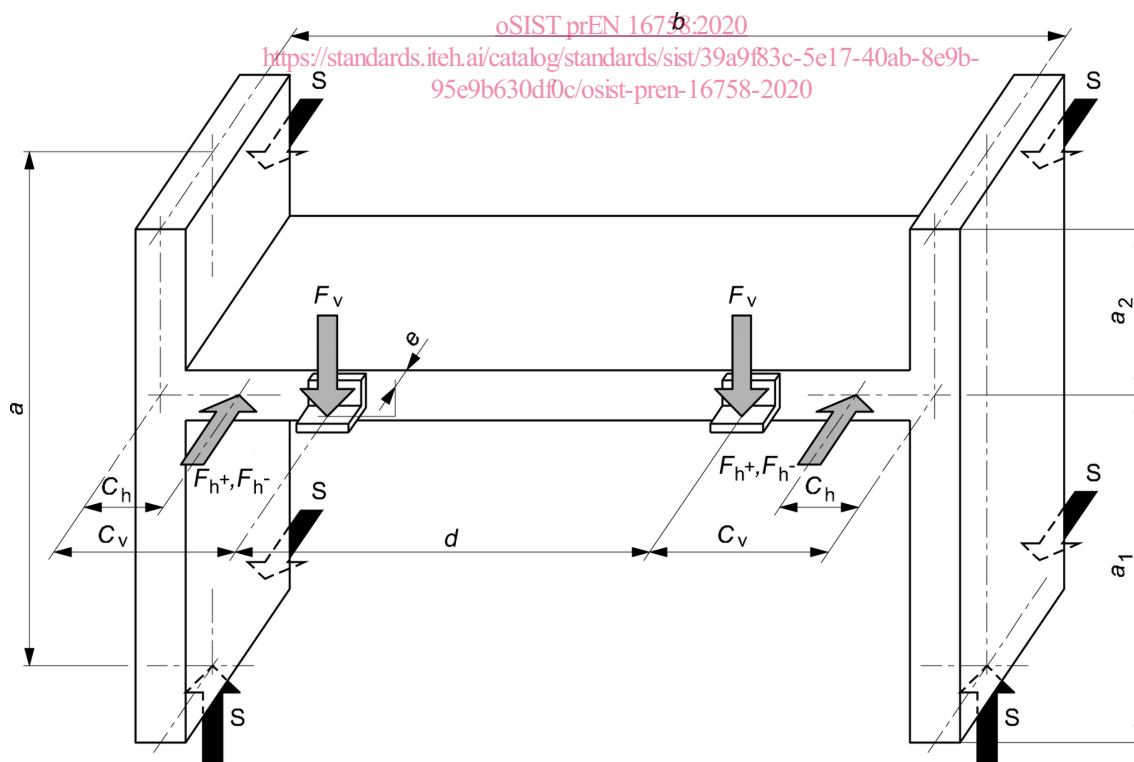


Figure 4 — Schematic T-connection and loading points

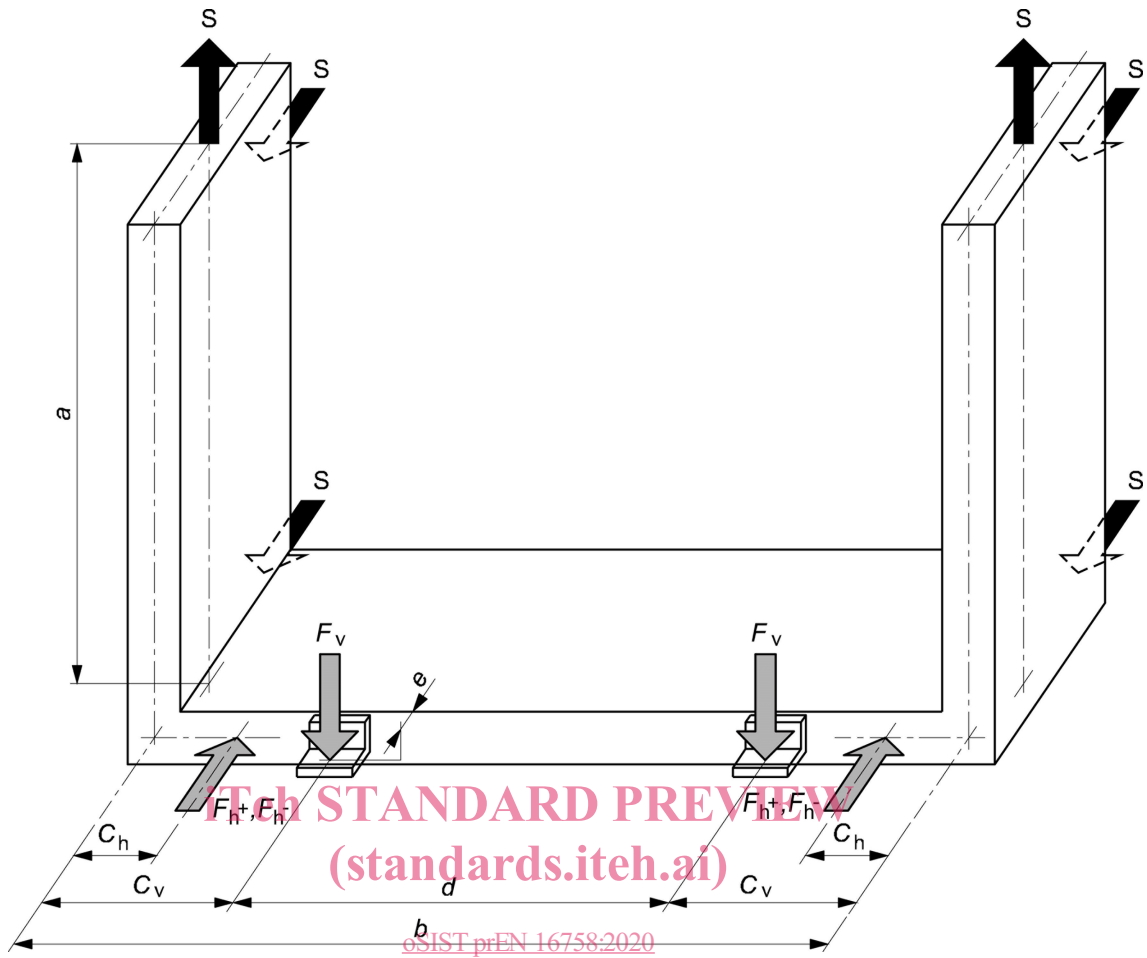


Figure 5 — Schematic L-connection and loading points

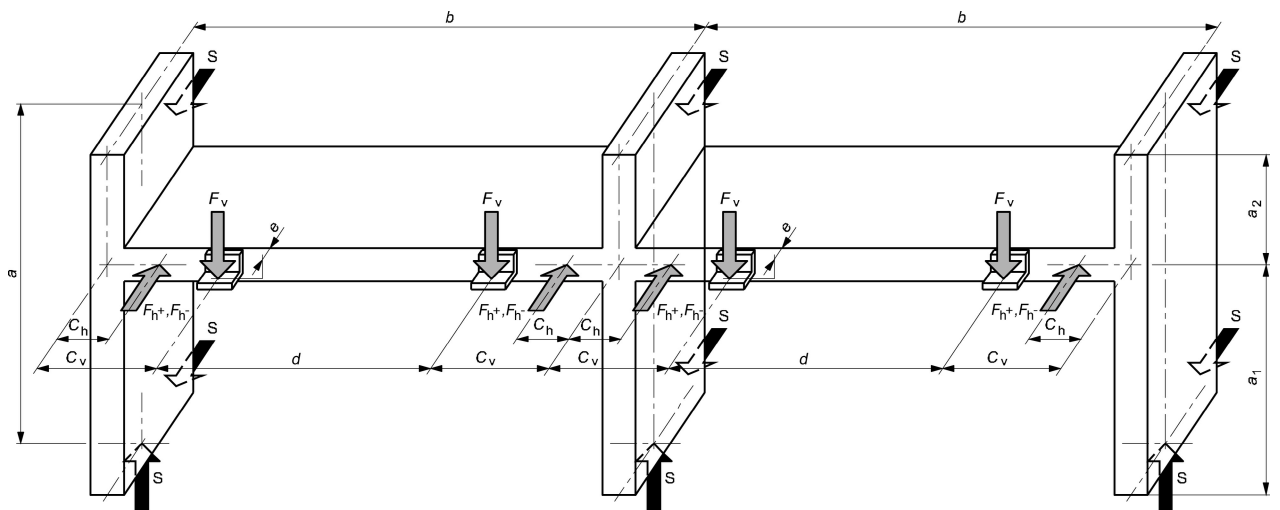


Figure 6 — Multiple schematic T-connection and loading points