Laterlite
Le tue soluzioni per costruire

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DICHIARAZIONE DI PRESTAZIONE

ai sensi del Regolamento Delegato (UE) n. 574/2014 del 21 febbraio 2014

N° 0068

1. Codice identificativo unico del prodotto tipo: **0068 – Connettore CentroStorico Acciaio Avvitato**

2. Uso previsto del prodotto da costruzione: **Connettore per strutture composte, per elementi strutturali di calcestruzzo e in acciaio strutturale laminati o formati a freddo, collegati insieme per prevenire scorrimenti longitudinali tra i due materiali, e il loro distacco.**
   Il dimensionamento delle travi composte usando i connettori "Connettore Centrostorico Acciaio Avvitato" deve essere fatto in accordo con gli Eurocodici, in particolare l'Eurocodice 4.

3. Nome e indirizzo del Fabbricante:
   LATERLITE S.p.A.
   Via Vittorio Veneto, 30 Frazione Rubbiano
   43046 Solignano (PR)

4. Rappresentate autorizzato: **Non applicabile**

5. Sistema AVCP: **2+**

6. Documento per la valutazione europea: **EAD 200033-01-0602 Nailed or Screwed Shear Connector**
   Valutazione tecnica europea: **ETA-22/0487; 2022-08-11**
   Organismo di valutazione tecnica: **ETA-Danmark A/S**
   Organismo notificato: **n. 1020 - TZUS**

7. Prestazioni dichiarate:

Caratteristiche essenziali	**Prestazione**
Resistenza caratteristica in soletta piena di calcestruzzo, connettore a taglio orientato parallelamente all'asse della trave.	Vedi Annex C1 dell'ETA-22/0487
Resistenza caratteristica in soletta piena di calcestruzzo, connettore a taglio orientato perpendicolarmente all'asse della trave.	NPA
Resistenza caratteristica nei solai compositi – nervature perpendicolari all'asse della trave – connettore a taglio orientato perpendicolamente all'asse della trave.	NPA
Resistenza caratteristica nei solai compositi – nervature perpendicolari all'asse della trave – connettore a taglio orientato parallelamente all'asse della trave.	NPA
Resistenza caratteristica nei solai compositi – nervature parallele all'asse della trave – connettore a taglio orientato parallelamente all'asse della trave.	NPA
Resistenza caratteristica nei solai compositi – nervature parallele all'asse della trave – connettore a taglio orientato perpendicolarmente all'asse della trave.	NPA
Resistenza caratteristica degli ancoraggi terminali nei solai compositi	NPA
Resistenza caratteristica per l'utilizzo nelle aree sismiche sotto azioni sismiche ai sensi della norma EN 1998-1.	Vedi Annex B1 dell'ETA-22/0487
Resistenza caratteristica in soletta piena di calcestruzzo in applicazioni di ristrutturazione con materiale in vecchio ferro metallico o acciaio con un carico di snervamento effettivo inferiore a 235 MPa.	Vedi Annex C2 dell'ETA-22/0487
Limite di applicazione	Vedi Annex B3 dell'ETA-22/0487

Reazione al fuoco	I connettori sono realizzati in acciaio classificato come EuroClasse A1 in conformità alla norma EN 13501-1 e al Regolamento Delegato della Commissione 2016/364
Resistenza al fuoco	NPA

La prestazione del prodotto sopra identificato è conforme all'insieme delle prestazioni dichiarate. La presente dichiarazione di responsabilità viene emessa in accordo al Regolamento UE N 305/2011 sotto la sola responsabilità del fabbricante sopra identificato.
Firmato a nome e per conto del fabbricante da:

Ing. Massimo Nicolosi, Responsabile Qualità

Rubbiano, 30 giugno 2025 rev.01

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Use:
The screwed shear connector Connettore CentroStorico Acciaio Avvitato is intended to be used as connection device between steel and concrete in composite beams according to EN 1994-1-1. The connector can either be used in new buildings or for the renovation of existing buildings with the aim to increase the bearing capacity of aged floor constructions.

Shear connections of composite structures subject to:
- Static and quasi-static loading.
- The intended use comprises composite structures with static or quasi-static loading. However, seismic load can be transferred by means of the Connettore CentroStorico Acciaio Avvitato connector using an additional overstrength factor (in addition to the safety factor) of 1.3 (to account for the brittle failure mechanism).

Base materials:
- Structural steel beams S235, S275 and S355 in qualities JR, JO, J2, K2 according to EN 10025-2. Minimum thickness of the beam flange: where screws are fixed, the steel thickness must be at least 6 mm
- Old steels which cannot be classified accordingly are still applicable provided these are made of unalloyed carbon steel with minimum yield strength f_y of 170 N/mm².

Concrete:
- Normal weight concrete C20/25 – C50/60 according to EN 206 with minimum density 2400 kg/m^3
- Lightweight concrete LC20/22 - LC45-50 according to EN 206 with minimum density 1400 kg/m^3 (Limit according to the scope of the EAD)

Composite decking:
- Steel for profiled sheeting follows EN 1993-1-3 and the material codes given there. The decking must be manufactured according to EN 10346 and have a yield strength between 220 and 355 N/mm².

Design:
- Design of the composite beams with Connettore CentroStorico Acciaio Avvitato shear connectors is made according to EN 1994-1-1.
- Transverse reinforcements shall be able to resist the longitudinal shear stress associated with the connection and must be sized and implemented in accordance with the calculation standard EN 1994-1-1 section 6.6.6.
- The partial safety factor of $\gamma_V = 1.25$ is used provided no other values are given in national regulations of the member states.

Installation:
- The installation is only carried out according to the manufacturer's instructions.
- The fixing of the connectors must be checked by the installing company.
- The installation of connectors must be entrusted to qualified persons who have read and understood the information in this manual for their implementation.

Screwed shear connector Connettore CentroStorico Acciaio Avvitato	**Annex B1** of European Technical Assessment ETA-22/0487
Intended use - Specification	

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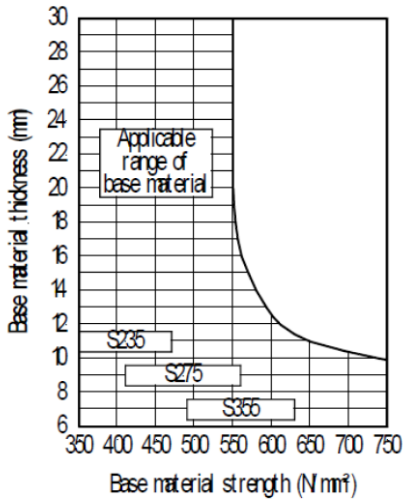
Applicable range of base material



Base material:
Structural steel S235, S275 and S355 according to EN 10025-1:2004; minimum thickness = 6 mm

Checks while work is in progress
Following checks must be carried out:
At the beginning of each fixing sequence:
Test 1 - Hole diameter measurement;
Test 2 - Hole depth measurement;
Test 3 - Connector rotation test;
Test 4 - Screw rotation test;
Test 5 - Mechanical test on one connector.

Each installed connector:
Test 3 - Connector rotation test;
Test 4 - Screw rotation test.

Every 25 installed connectors:
Test 1 - Hole diameter measurement;
Test 2 - Hole depth measurement.

Every 250 installed connectors:
Test 5 - Mechanical test on one connector.

At the last installed connector:
Test 5 - Mechanical test on one connector.

A fixing sequence is characterized by a set of parameters that can influence the screwing result: thickness of the profile flange, steel grade, change of drill bit or of tool, etc. Each time one of these characteristics changes, the screw system must be reconfirmed.

Treatment of connector with non-compliant fixing
When work is in progress, if the visual test is not satisfactory (see manufacturers information), a mechanical inspection should be performed to ensure the validity of connection.
If the mechanical test (test 5) is satisfactory, the series can be kept. Otherwise, the faulty connectors must be replaced.

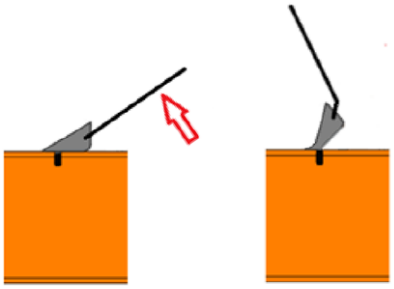
Tests
Test 1 - Hole diameter measurement
Use a regularly checked caliper to measure the diameter of the hole made in the support. Hold the caliper in a horizontal position. Take measurements on several different axes. Refer to the average between the measurements to assess the correctness of the diameter.

Test 2 - Hole depth measurement
Only to be done in the case of a hole not passing through the steel element.
Use a regularly checked caliper to measure the depth of the hole.

Test 3 - Connector rotation test
With the connector installed, try rotating the connector by lightly tapping it on the side with a hammer. If the connector is free to rotate, the test is failed.

Test 4 - Screw rotation test
To be done at the end of the connector installation. Keep the screwdriver switched on for 3 seconds. If the screw does not turn, the test is passed.

Test 5 - Mechanical test
The test consists of placing a rebar with diameter 10 mm and length 50 cm on the vertical hole of the connector and pull up the connector. The base plate of the connector should bend at 45° and the screw should lay down in place without coming out of its original position.
If the screw remains in place, the fixture is correct. Otherwise, the fixture is considered faulty.
This check is partly destructive for the connector. It will therefore be necessary to fit a new one next to the connector tested.



Screwed shear connector Connettore CentroStorico Acciaio Avvitato	**Annex B3** of European Technical Assessment ETA-22/0487
Application limit and fastener inspection	

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Table C1 Characteristic and design resistance in solid concrete decks, shear connector orientation parallel to beam axis [1) and 2)]. Minimum base material thickness 8 mm. For base material thickness less than 8 mm, see Annex C2.

Concrete class	Characteristic Resistance P_{Rk} [kN]	Design resistance P_{Rd} [kN]	Ductility assessment according to EN 1994-1-1
C20/25 or greater LC20/22 or greater	25.5	20.4	Non-ductile

1) in the absence of other national regulation, a partial safety factor of $\gamma_V = 1{,}25$ applies
2) Lightweight concrete with a minimum density $\rho = 1400$ kg/m^3

Design resistance: Effect of reduced base material thickness for Connettore CentroStorico Acciaio Avvitato Connectors

Reduction of design resistance P_{rd} with the factor ($t_{II,act}$ / 8) is required in case the actual base material thickness is less than 8 mm.

$$P_{Rd,red} = \frac{t_{II.act}}{8} P_{Rd}$$

With:
$P_{Rd,red}$ = reduced design resistance of Connettore CentroStorico Acciaio Avvitato connectors for actual base material thickness $t_{II,act}$ < 8 mm and a minimum thickness of 6 mm.
P_{Rd} = design resistance of the connectors

No extrapolation of above formula for base material thickness $t_{II,act}$ > 8 mm.

This reduction of resistance is not added to the possible reduction of resistance due to metal decking. The factor resulting in the largest reduction is used.

Design resistance: Effect of reduced base material strength

Reduction of design resistance P_{rd} with the factor $\alpha_{BM,red}$ is required in case the actual base material minimum yield strength of the old construction steel is less than 235 N/mm^2

- minimum yield strength f_y= 170 N/mm^2
  $P_{Rd,red} = \alpha_{BM,red} \times P_{Rd}$
  $\alpha_{BM,red} = 0.99$
  with:
  $P_{Rd,red}$ = reduced design strength of the connector

This reduction of resistance is not added to the possible reduction of resistance due to metal decking. The factor resulting in the largest reduction is used.