

SOLUTIONS FOR ANTI-SEISMIC REINFORCEMENT



LET'S TALK **ABOUT SOLUTIONS.**

All seismic events recently happened showed clearly how **assets around the world are extremely vulnerable and affected by structural deficiencies**, especially when it comes to pre-cast structures.

EDILMATIC used its long experience in the field of pre-cast in order to develop a specific line of efficient solutions aiming to improve existing buildings so that they can comply with the safety regulations.

A quick solution to an urgent problem.

WE OFFER SOLUTIONS ABLE TO SOLVE EACH ONE OF THE MOST IMPORTANT CRITICAL STRUCTURAL DEFICIENCIES FOLLOWING SOME KEY ASPECTS, LIKE:

RESISTANCE

An innovative project plan, a careful calculation of volumes and a proper execution ensure the delivery of a range of solutions with top-quality and safe mechanical performances.

DISSIPATION

The project approach of **EDILMATIC** aims to give solutions that, in addition to the elasticity, ensure **great performances with regards to the plasticity too**, by dissipating the seismic energy and enabling limited and controlled displacements, thus avoiding serious structural damages. All tests have been carried out using test benches complying with today's regulations.

LOW INVASIVITY

EDILMATIC's solutions allow a detailed approach to the project issues. The features of each connection system allow our customers to use a limited number of elements installed considering the correct volume requirements. **Easy installation, maintenance and inspection** are key aspects at **EDILMATIC**, alongside with the lower use of inserts that can weaken the concrete.



PROJECT
PLANNERS

COMPANIES

ASSOCIATIONS

UNIVERSITIES

EDILMATIC

A NETWORK KNOW-HOW

Experience and Know-How sharing is key in the field of project planning and **EDILMATIC** has always fostered such a cooperation.

WHEN IT COMES TO SAFETY, NOTHING IS BETTER THAN SHARING KNOWLEDGE.

TECHNICAL DOCUMENTATION

EDILMATIC's solutions are always available with detailed technical documentation and calculation examples that can ease the project planner's job.

PROFESSIONAL CONSULTANCY

Our technical department is eager to exchange experiences and points of view in order to deliver the best support possible in terms of product application as well as problem solving.

TECHNICAL TRAINING



Our newest training room is the space in which professionals, who are guest here, can attend specific and exclusive training sessions held by not only our staff members, but also university academics, advisors and other specialized engineers.

RESTRAINT CONNECTION SOLUTIONS

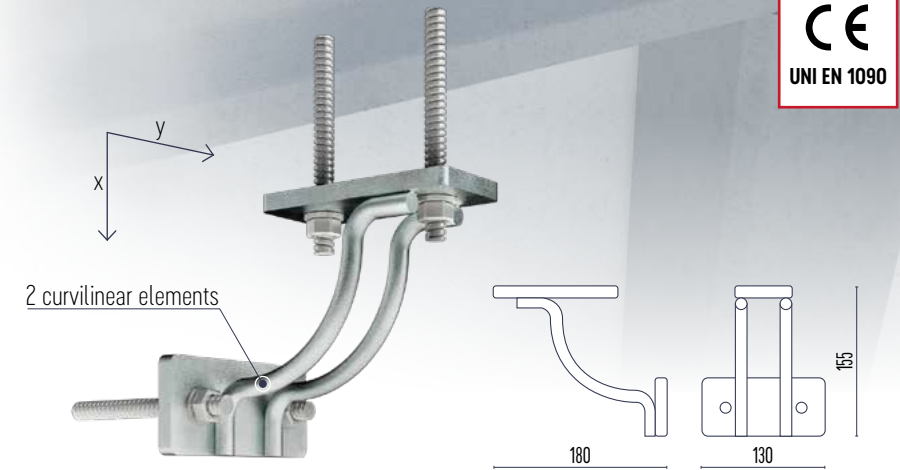
TILE – BEAM

EDIL CTT

This connection has been developed to connect tiles to beams. The connector **PREVENTS**, by absorbing the energy, **THE TILE FROM LOOSING SUPPORT SURFACE** and limits the occasional translation. The element can fit as connector – as indicated by the regulation – although maintaining high performances thanks to the plasticization of the curvilinear elements.

FASTENING

anchors **M12**



STRUCTURAL STEEL **S275**

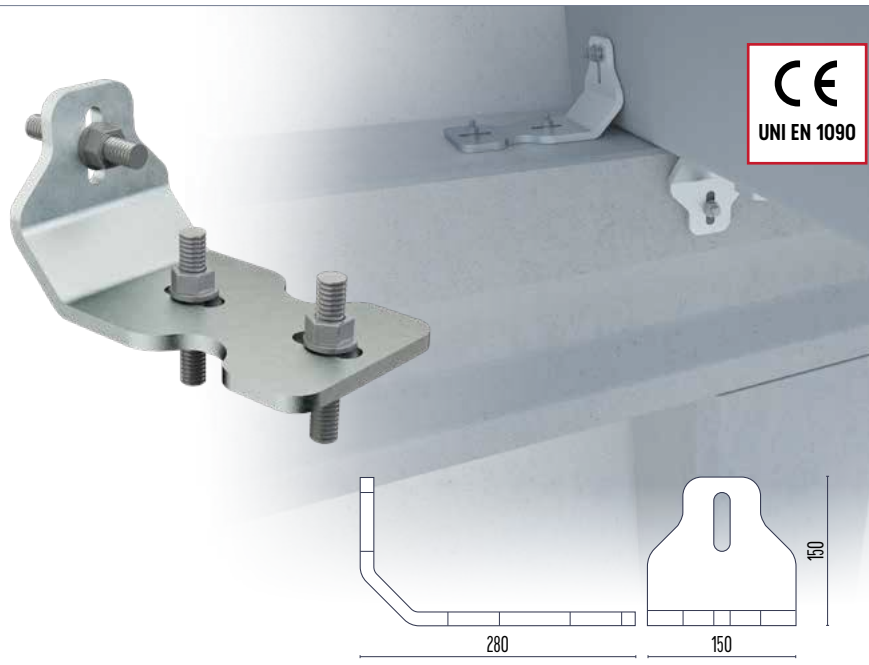
AXIS X PROJECT DISPLACEMENT	$d_{bd} = \pm 25 \text{ mm}$
AXIAL PROJECT FORCE A d_{bd} X	$V_{Ebd} = 12 \text{ kN}$
AXIS Y PROJECT DISPLACEMENT	$d_{bd} = \pm 12,5 \text{ mm}$
AXIAL PROJECT FORCE A d_{bd} Y	$V_{Ebd} = 6,5 \text{ kN}$

EDIL TTR

Angular connector developed to connect covering tiles to beams in a rigid way. The connector has been realized using high performance steel and **PREVENTS THE TILE FROM LOOSING SUPPORT SURFACE** by limiting also the occasional translation. The element is easily adaptable to the available installation spaces.

FASTENING

anchors **M16**



AXIAL PROJECT FORCE	$V_{Ebd} = 20 \text{ kN}$
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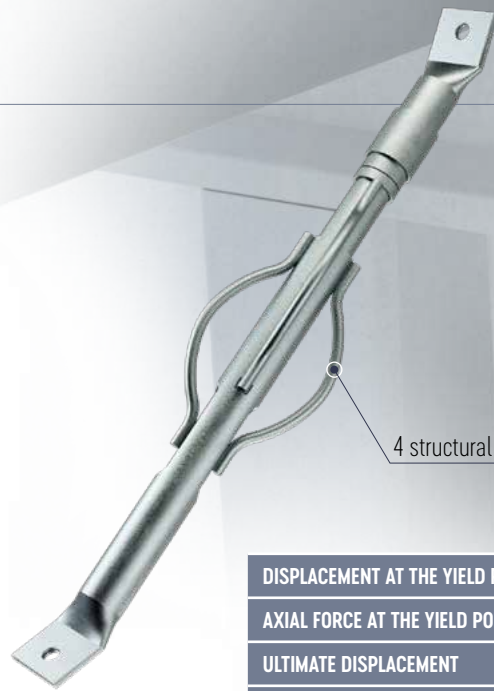
RESTRAINT CONNECTION SOLUTIONS

TILE – BEAM

EDIL TT

Linear element developed to connect cover tiles to beams. The connector **PREVENTS**, by absorbing the energy, **THE TILE FROM LOOSING SUPPORT SURFACE** and limits the occasional translation. The rotating intersection as well as the possibility of bending the edges to the required angle, make the installation easy and handy.

FASTENING anchors **M12**



Tubes: STRUCTURAL STEEL **S355**
Arches: STRUCTURAL STEEL **S275**

Total length:
about 763 mm

4 structural arches

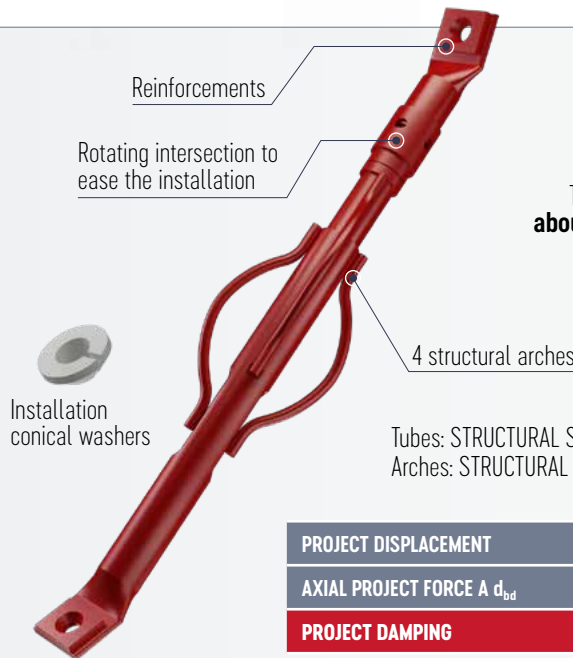


DISPLACEMENT AT THE YIELD POINT	$d_{yd} = \pm 4,5 \text{ mm}$
AXIAL FORCE AT THE YIELD POINT	$V_{yd} = 20 \text{ kN}$
ULTIMATE DISPLACEMENT	$d_{ud} = \pm 17,5 \text{ mm}$
ULTIMATE AXIAL FORCE	$V_{ud} = 30 \text{ kN}$

EDIL TT-N

The evolution of the TT and certified as anti-seismic dissipator thanks to the increased performances. The flaring holes at the extremities together with the conical washers included in the kit, make the fastening ideal and easy. The rotating intersection has been developed with holes in order to be filled through the use of resin. The connection is **MECHANICAL** and **PREVENTS THE TILE FROM LOOSING SUPPORT SURFACE**.

FASTENING anchors **M16**



Total length:
about 763 mm

Tubes: STRUCTURAL STEEL **S355**
Arches: STRUCTURAL STEEL **S275**

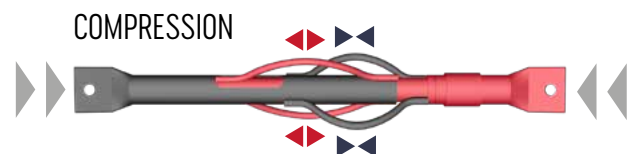


The connector is certified as anti-seismic dissipator at the **University Politecnico di Milano**, complying with the regulation **UNI EN 15129**

PROJECT DISPLACEMENT	$d_{bd} = \pm 12,5 \text{ mm}$
AXIAL PROJECT FORCE A d_{bd}	$V_{Ebd} = 20 \text{ kN}$
PROJECT DAMPING	43%

THE PRINCIPLE OF THE EDILMATIC TUBULAR CONNECTORS

The connectors are built combining **TWO STEEL COUPLED TUBES**, which are kept together by a **SERIES OF ARCHES** appropriately welded and positioned. When subjected to traction or compression the connectors tend to stretch out or shorten thanks to the sliding movement of the tubes, to which the arches apply a contrary force.



RESTRAINT CONNECTION SOLUTIONS

BEAM – PILLAR

EDIL TP

Linear element developed to connect beams to pillars. The connector, by absorbing the energy, **PREVENTS THE BEAM FROM LOSING SUPPORT SURFACE**, by limiting the occasional translation.

FASTENING anchors **M20**

Tubes: STRUCTURAL STEEL **S355**
Arches: STRUCTURAL STEEL **S275**



Total length:
about **840 mm**

4 structural arches

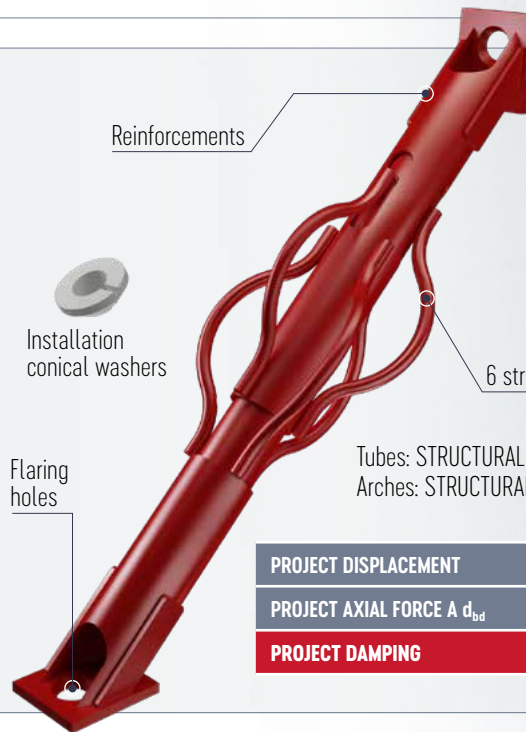


DISPLACEMENT AT THE YIELD POINT	$d_{yd} = \pm 4,5 \text{ mm}$
AXIAL FORCE AT THE YIELD POINT	$V_{yd} = 50 \text{ kN}$
ULTIMATE DISPLACEMENT	$d_{ud} = \pm 17,5 \text{ mm}$
ULTIMATE AXIAL FORCE	$V_{ud} = 68 \text{ kN}$

EDIL TP-N

This is the evolution of the EDIL TP which is certified as anti-seismic dissipator thanks to its enhanced performances. The extremities have been reinforced further and the number of arches increased from 4 to 6. The flaring holes at the extremities together with the conical washers included in the kit, make the fastening ideal and easy. The connection is **MECHANICAL** and **PREVENTS THE TILE FROM LOSING SUPPORT SURFACE**.

FASTENING anchors **M24**



Total length:
about **845 mm**

6 structural arches

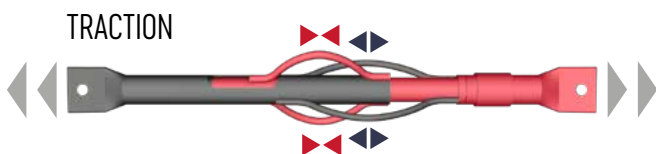
Tubes: STRUCTURAL STEEL **S355**
Arches: STRUCTURAL STEEL **S275**



The connector is certified as anti-seismic dissipator at the **University Politecnico di Milano**, complying with the regulation **UNI EN 15129**

PROJECT DISPLACEMENT	$d_{bd} = \pm 12,5 \text{ mm}$
PROJECT AXIAL FORCE A d_{bd}	$V_{Ebd} = 72 \text{ kN}$
PROJECT DAMPING	39%

An original EDILMATIC solution, able to preserve the integrity of structures through a micro-invasive approach.



The arches react perfectly thanks to a due mounting that makes them work in opposite directions. Connectors have **HIGH PERFORMANCES IN AN ELASTIC ENVIRONMENT** and the consequent plasticization of the arches is able to dissipate heavy loads.

■ ANTI-SEISMIC REINFORCEMENT 2021

SOLUTIONS FOR PANELS

VERTICAL PANELS

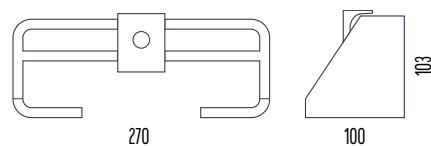
EDIL PV

This system has been developed in order to connect vertical panels to the perimeter beam. The bracket **PREVENTS THE PANEL FROM TILTING** and through the sliding of the element along the central rail occasional and limited horizontal movements are permitted, granting the safety of the structure.

FASTENING anchors **M16**



STRUCTURAL STEEL **S235**



PROJECT DISPLACEMENT	± 100 mm
PROJECT RESISTANCE	18 kN

HORIZONTAL PANELS

EDIL PO

This system has been developed in order to connect horizontal panels to the pillars. The corner-bracket **PREVENTS THE PANEL FROM TILTING** and through the hole occasional and limited horizontal movements are permitted, granting the safety of the structure.

FASTENING anchors **2xM12**
1xM16



STRUCTURAL STEEL **S235**



PROJECT DISPLACEMENT	± 30 mm
PROJECT RESISTANCE	17 kN

EDILMATIC is specialized for the research, the development and the production of specific systems aiming to the assembly and the reinforcement of pre-cast buildings.



ISO 9001 MANAGEMENT SYSTEM

ISO 1090-1 CERTIFICATE FOR THE CONFORMITY OF THE FABRICATION CONTROL WITHIN THE COMPANY

UNI EN ISO 9001 PLANNING AND PRODUCTION OF ANCHORING SYSTEMS WITHIN STRUCTURAL CONCRETE ELEMENTS THROUGH METAL FASTENERS



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