



TECHNOLOGICAL INNOVATION BASED ON EXPERIENCE

B.S. Italia, was founded to offer commercial products and services to the precast industry. B.S. Italia products have been developed with over 50 years of experience in the precast concrete industry. We offer our customer this unique experience the wealth of which is channelled into ever-evolving innovations in products and services.

Indeed, all of the patented products offered by B.S. Italia have been conceived, manufactured, and tested in-house to insure that we meet our goal of improving and simplifying the production process while observing the key elements of total quality, safety, precision, versatility and speed.

Our products are designed to be easy to use, safe, and efficient, ensuring that our customers can achieve the highest quality results in their projects.

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DXTERM
NEW CALCULATION PROGRAM



The DXTERM program is to assist planners to determine the thermal transmittance of the panels according to UNI EN 6946:2008.

DJ IIIJ



THE NEW GENERATION FOR THERMAL-BREAK WALLS



OX SYSTEM FOR THERMAL-BREAK WALLS

The **IX** system represents the new generation of connection systems between the concrete spaced layers in the prefabricated thermal break walls.

This is an innovative system consisting of **Brackets and Forks**.

The Brackets, called **IX**, are innovative industrialized elements capable of structural performance at the top of the sector even in the presence of a local thermal bridging reduced to the minimum terms to be almost irrelevant.

Capable of an excellent interaction with the concrete, the **IX** brackets guarantee an effective support for the external layer in thermal break panels and an efficient seam between the layers offering flexibility, ductility, durability, safety, precision and ease of use.

The Forks, called **direct interlocking**, realize an innovative, powerful, tenacious and effective connection to the metal armor of the hung layer, able to keep them stable and perfectly orthogonal to the layers of the panel even in the presence of accidental impacts.

Both components of the system are made of inox steel and are designed to ensure maximum collaboration with the concrete and the metal reinforcement of the thermal break panel. Moreover, they guarantee the constant thickness of the insulation and, through a simple and intuitive configuration, guarantee maximum efficiency in all phases of the panel life, making them easy to use, tough, rigid and sturdy to guarantee an efficient connection between the panel layers but at the same time sufficiently flexible in order to allow the necessary movements of the outer layer consequent to the thermo-hygrometric variations and suitably **tenacious for functioning in seismic key**.



OX

SUPPORTING BRACKET

OX is an innovative shelf for supporting the layer of concrete hanging from the load-bearing layer in prefabricated thermal break panels. It supports and unites locally the two layers of concrete separated from each other by the presence of the insulating layer that makes the thermal cut. In the market of the proposals for thermal cutting, OX distinguishes itself thanks to its high compatibility with the concrete panel and to the almost irrelevant local thermal bridging. Thanks in fact to a thorough engineering of form and materials, OX guarantees high performance both in static and thermal terms.

Made of AISI316 inox steel, OX gives to the system a high durability and thermal conductivity at least 3 times lower than similar solutions currently on the market made of carbon steel and then galvanized, thus obtaining the most efficient thermal cutting bracket currently proposed by the market.

OX has a studied shape that guarantees an efficient connection between the layers of concrete, whose high performances are already exploited in the draft phase of the panel by the formwork, phase in which OX plays a seam role between the supporting layer and the hanging one, favoring the easy decohesion between the concrete and the formwork surface.

In this phase, in fact, generally characterized by a low value of the strength of the concrete, the integral and effective connection exerted by OX between the outer layer and the internal supporting layer, favors the separation of the outer layer from the surface of the formwork even in the presence of high levels of cohesion.

The shape of the OX bracket makes it an ally of concrete, with which it interacts effectively, guaranteeing a vigorous stitching action in the first stages of the panel's life and a strong support of the layer hung in order to make possible also the installation of slanted thermal-break panels. Its shape and the material with which it is built make the OX shelf perfectly compatible and integrated with the thermal break panel in relation to which it results as an organic solution and not a foreign body.

OX has integrated suitable systems that allow the rapid and stable hooking to the reinforcement of the hanging layer, thus favoring the immovability of the system against accidental impacts and also the subsequent concrete casting phases and the installation of the insulating layer.

constancy of thickness, thus avoiding the formation of panel areas with reduced insulating capacity that negatively affect the final result in terms of transmittance and are potential mould formation sites.

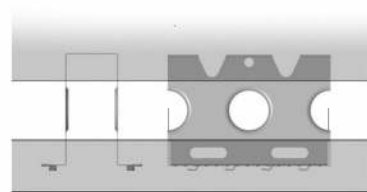
OX as a support bracket with respect to the external layer hung thanks to its high stiffness and longitudinal strength. Its high transversal flexibility, guaranteed by the small thickness and by the wall holes, favors and supports the physiological movements of the outer layer consequent to the changing of the thermohygrometric conditions. OX is therefore synonymous of power and flexibility.

In summary OX is an innovative shelf for the support of the outer layer in prefabricated concrete panels with thermal break, extremely light but robust performing but also able to introduce a very small local thermal bridging, strongly connected to the concrete of the panel but also able to allow the transversal movements so as to support the effects resulting from the thermohygrometric variations. It's easy to use and with high durability and reliability and it has a reduced cast compared to other market proposals.

MAXIMUM PERFORMANCE WITH MINIMUM THICKNESS

OMEGA X Brackets offer the industry record: no other metal bracket on the market of the support connectors layers of thermal break panels, offers a so small thermal bridging combined with such a high payload.

These innovative brackets activate a trellis-resistant mechanism, therefore bidirectional, synthesis of extreme power and strength but for the first time with the minimum thickness and overall section of material. We are in the presence of the top of the static + thermal performance at the same time.

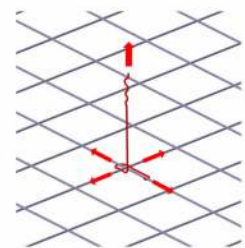


TENACITY

The system guarantees an inseparable and tenacious connection with the reinforcement of the hanging layer.

The reinforcement is involved as a whole avoiding thus resistant mechanisms, notoriously fragile, based only

based on the traction of only concrete, in an uncertain portion and maybe out of curve, it evolves towards a resistant mechanism that makes participate in large and especially reinforced zones.



FLEXIBILITY

The system follows the linear thermal and hygrometric expansion.

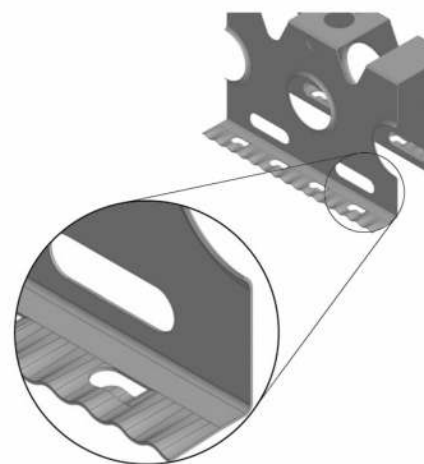
With this system, the hanging layer can absorb, with respect to the bearing layer, the dimensional variation differential resulting from the thermal or hygrometric jump.

IMPROVED ADHERENCE

Omega X brackets can boast unparalleled interactions with concrete.

They are not a foreign body, neither for material nor for shape, they are neither invasive nor tending to locally cut the concrete and do not concentrate the stresses but they distribute them in an organic way on a wider area and always in a bidirectional way.

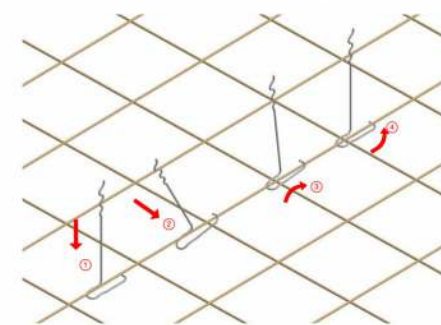
The OMEGA X brackets are characterized by perforations and undulations that achieve improved adhesion with the concrete, enhancing the interaction with it and ensuring maximum collaboration: adhesion-interaction-anchorage-seam, consecrate them as the best ally of concrete.



EASY TO USE

In the panel production phase, the system is extremely easy to use, intuitively and quickly, simplifying work and reducing labor costs.

The brackets are placed comfortably close to the sides of the formwork and the fixing of the same takes place in a quick, simple and precise way and without additions.



ORTOGONALITY TO THE LAYERS

The metal inserts create a band of coupling to the reinforcement of the hanging layer ensuring the orthogonality of the same in relation to the concrete layers.

In relation to the typical horizontality of the reinforcement

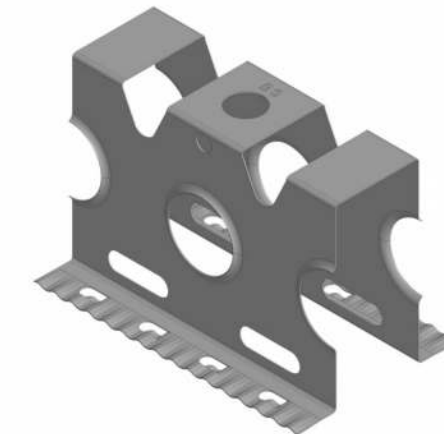
forks connecting the layers to each other, represents the native operating safety in a certain position.

The brackets, in the plane of the hanging layer, are constrained in order to follow the parallelism with the longitudinal and transversal reinforcement, remaining stable orthogonally to the layers.

The innovative interlocking system of the forks confers operating safety to the system, generating a rigid, immovable and inseparable constraint between the reinforcement and the connection layers: a quick jointing system, operating as tie rod-strut, therefore bidirectional, so that any accidental knocks, during the installation of reinforcement beams or insulating sheets, do not change its verticality or reduce its functionality or payload.

DURABILITY

The use of stainless steel for all the components of the system is a guarantee of durability over time. The extreme optimization of the bracket thickness makes it possible for the first time to propose sustainable solutions even using stainless steels that are significantly more performing than austenitics.



PRICE-PERFORMANCE

The innovative Omega X system represents the winning performance at minimum cast.



DIRECT INTERLOCKING FORKS

The first quick-installation fork that integrally joins the reinforcement of the layer hung in the prefabricated concrete thermal break panels. The connection link is fast and powerful, able to activate a mechanism of union between the reinforcement and the fork characterized by DUCTILITY, TENACITY and INSEPARABILITY. The classic ligatures made with wire or the addition of other metal elements or the use of welds to ensure the connection between the fork and the reinforcement will no longer be necessary because the union is quickly and dryly created in a guaranteed and unmovable way, so simple and fast to be definable self-installing.

Through this quick coupling the forks not only join the network directly in the crossing, but for the first time realize a constraint that works in a bidirectional way, like a joint that is active both in tension and compression, pulling or pushing the net that has become a single body with forks.

The innovative direct interlocking fork thanks to its characteristic shape, is mechanically connected to the metal reinforcement of the outer layer of concrete, creating with it a solid constraint able to keep the fork perfectly orthogonal to the layers of the panel, thus eliminating any possible risk of displacement and / or fall in the delicate installation phase of the insulating layer. The high adherence to the concrete developed thanks to the characteristic shape of the direct interlocking fork guarantees, in the draft phase of the panel generally characterized by a low value of the resistance of the concrete, a solid and effective connection between the external layer hanging and the internal supporting layer, thus favoring the easy detachment of the outer layer from the surface of the formwork.

The shape of the fork and its innovative attachment system to the reinforcement guarantee correct operation even during the start-up phase of the façade panel. Its perfect orthogonality to the layers of the panel guaranteed by the hooking system to the metal reinforcement ensures a pull / strut operation suitable to effectively counteract the actions acting orthogonally to the panel surface (adhesion to the formwork, pressure and wind de-pressure, etc.). Its high lateral flexibility also allows the outer layer to support the effects deriving from the daily and / or seasonal thermo-hygrometric variations.

The lack of orthogonality between the fork and the layers of the panel can generate potentially between the layers, cracks caused by the unforeseen impediment to the free movement of the outer layer, etc.

The tenacious connection between the layers carried out by the direct interlocking fork plays an extremely important role also in the seismic field where, due to its mass, the outer layer brought tends to move freely with respect to the supporting layer, causing possible detachments and / or decohesion between the layers of the panel. The direct interlocking forks are the perfect ally for prefabricated concrete panels, ensuring a reliable and effective seaming of the layers, ensured by the innovative quick coupling system to the reinforcement of the outer layer, which guarantees a perfect and stable verticality in phase of realization of the panel.

The high anchoring to the concrete produced by the particular shape of the direct interlocking fork ensures a powerful and tenacious connection between the layers of the panel offering, at the same time, a transversal flexibility suitable to support the effects produced by thermo-hygrometric variations and a seismic tenacity.