

What is Reval?

Reval is Valbruna's stainless steel rebar product line. Reval is rebar, mesh, threaded bars and potentially anything you would need on a job site to reinforce concrete.

What is stainless rebar used for?

To prevent concrete damage over time due to concrete reinforcement corrosion, there are 2 options really: use of stainless steel mesh in the outer layer of concrete to prevent cracking, or use of SSR to prevent spalling of concrete where mild steel reinforcement otherwise corrodes.*

** - when carbon steel corrodes, it doubles its volume and "cracks" the concrete from the inside.*

Isn't that an expensive solution?

Stainless steel is a far better material than mild steel, and therefore more expensive. BUT it should only be used where needed; on the outer layer of concrete on exposed zones, where erosion, permanent moisture, chlorides and sulfates corrode traditional mild reinforcement. It represents only max 2% of the total reinforcement in most cases.

Isn't there any cheaper solutions?

Yes, but only at the time of construction. ALL other solutions; rebar epoxy coating, concrete coating, cathodic protection, thicker concrete cover, WILL demand costly maintenance in time.

Where is it used?

Infrastructure: Bridges, viaducts, tunnels, flood defense, harbor, and dams

Construction: underground parking lots, balconies

Off shore: Floating concrete structures, GBS

Why does Valbruna promote it when the market is so little?

If we don't promote, other technologies will address lifetime issues;

BUT no other product has likeable mechanical properties, non corrosive abilities and green profile. Stainless steel is 98% recyclable AND can be designed, cut and bend, as usually done on site.

Do customers always use Reval ?

No.

There are several possibilities:

- 1- The project is large and therefore design & build: the contractor does the design and chooses materials to fulfill the client's specifications. IF lifetime is an issue, they will recommend SSR or epoxy coated or composites or coatings.*
- 2- The project is designed with Reval by the engineers. The contractor is only there to build. They might try to convince the engineers to drop SSR for other solutions too. (what happened in the Forth bridge)*

Once we have delivered Reval to a customer, are they automatically asking for quotes ?

No.

there are also several possibilities:

- 1- The contractor has a local purchase department: when we know them, they ask for quotes. (very few of them. for instance Skanska)*
- 2- The contractor works internationally and the local project team purchases: once we have traced the project, we can get in touch with them.*
- 3- The contractor works through a consortium of several, and appoints a purchasing team. (for instance the Mersey gateway , Spanish contractor, British subcontractor)*

4- *The contractor hires subcontractor, who will purchase : once we have traced the project, we can get in touch with them.*

Is Concrete durability such an issue?

Yes, it is very much since the crisis started, because one can budget a project, not maintenance and repair: it needs random cash and can't be planned from the beginning.

Is stainless steel only one type?

No, there are many! However not all satisfy the requirements for concrete reinforcements. Stainless steel rebars must fulfill mechanical, non-corrosive properties and bond strength. Hot rolled rebars do have a better bond strength than cold drawn, and 2 ribs is better than 3.

Common for all types is their ability to resist corrosion, which is defined by the PREN value or pitting corrosion value: The higher the value, the better corrosion threshold.

And the price !

The best suited materials are therefore :

- Duplex 1.4362: High corrosion threshold and lower nickel content makes this type a cheaper alternative than 1.4301*
- Duplex 1.4462: Very high corrosion threshold makes this type a better and cheaper alternative to 1.4401 or 1.4404.*

Steel grade	PREN value
304 / 1.4301	18
316 / 1.4401 / 1.4404	24
2304 / 1.4362	26
2205 / 1.4462	35
2507 / 1.4410	43