



© Sevalcon

**Opening photo: The Luzhniki Stadium, built in 1956 and recently renovated in view of the upcoming FIFA World Cup, coated with the Olympic Gold colour.**



**FOCUS ON TECHNOLOGY**

INNOVATIONS IN SURFACE TREATMENTS  
FOR METAL ARCHITECTURE



# Impol: the Supplier of High Quality PVDF Pre-Painted Aluminium for the Infrastructure of the 2018 World Cup in Russia

Alessia Venturi **ipcm**<sup>®</sup>

Eleven cities and twelve stadiums will host the 64 matches of the 2018 FIFA World Cup in Russia. About 15 billion Euros were invested in setting up the tournament, to build and renovate the infrastructures of the selected locations. These will be Moscow, with two facilities, Saint Petersburg, Kaliningrad, Nizhny Novgorod, Kazan, Samara, Saransk, Volgograd, Rostov-on-Don, Sochi, and Ekaterinburg. The two semi-finals will be played in Saint Petersburg and Moscow, while the final will be hosted by Moscow's Luzhniki Stadium.

The Luzhniki Stadium, built in 1956, has hosted a myriad of sporting and non-sporting events, including the 1980 Olympics. This wonderful building has 80,000 seats and it will host the opening match on June 14, which will see the home team face Saudi Arabia, and of course the final, scheduled for July 15.

The complete renovation of this stadium has required an investment of over EUR 350 million and it has included the creation of an upper band in pre-painted aluminium, for which PVDF coatings were used to ensure

“The complete renovation of this stadium has required an investment of over EUR 350 million and it has included the creation of an upper band in pre-painted aluminium, for which PVDF coatings were used to ensure that the exterior appearance of the building will remain intact for decades. The Olympic Gold-coloured pre-painted aluminium used for the Luzhniki Stadium was produced by Impol Seval, a company based in Sevojno, Serbia, which is a division of IMPOL group with the head office in Slovenska Bistrica, Slovenia.”

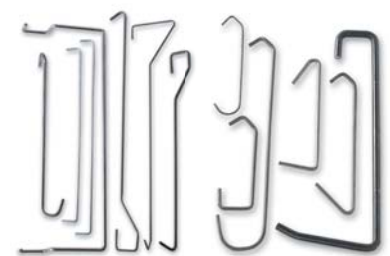
that the exterior appearance of the building will remain intact for decades. The Olympic Gold-coloured pre-painted aluminium used for the Luzhniki Stadium (ref. Opening photo) was produced by Impol Seval, a company based in Sevojno, Serbia, which is a division of IMPOL group with the head office in Slovenska Bistrica, Slovenia.

The Luzhniki Stadium (Fig. 1), is just one of the many projects, which Impol Seval has completed in Russia in the last few years, with its products branded Sevalcon, using high quality PVDF coatings. Among others, they were used for the Rossosh monastery, with the beautiful golden

onion dome coated with a wrinkled product featuring a gold/iridescent pigment; the new terminal of the Perm international airport (Fig. 2) for which the Dubai Gold colour was used (Fig. 3); VTB Arena, located in the heart of Moscow, for which a sea foam-inspired white pearl finish was used; and Zaryadye Park (Fig. 4), the new green lung of the city of Moscow a few steps from the Red Square, characterised by a metallic finish called Silver Charge. Thanks to its 35-year experience in the coil coating technology for aluminium and long term cooperation with SALCHI Metalcoat, high performance coatings with special effects were developed.



Figure 1: Detail of the Luzhniki Stadium, painted with PVDF products supplied by Salchi Metalcoat.



**FELTANIRETI**

SMALL METAL ITEMS

**Feltani Reti snc**

via Bassa Prima, 219  
S. Andrea di Campodarsego (PD)  
T +39 049.5564837  
F +39 049.7423260  
info@feltanireti.it



Figure 2: The new and futuristic terminal of the Perm international airport, where Impol and Sevalcon have applied the Dubai Gold finish.

### Impol: focus on quality in coil coating

In 2013, Impol started a new coating line that enabled it to dramatically change its product portfolio, positioning itself in a very high-end market segment. “From the beginning, Impol focussed on special products for architecture and infrastructure. In these sectors, quality is everything. Thanks to our new advanced coil coating line, we can finally offer structural aluminium for iconic buildings with special aesthetic effects and very high aging resistance performance. At the same time, we can ensure quality consistency also with very high volumes, which is the most critical issue when it comes to producing special finishes”, states Impol Seval’s Senior Sales Officer Nemanja Rosić. “There are two key elements to succeed in the field of exclusive architectural projects: high quality customised coatings made with high-performance raw materials and a plant able to apply them – these paints usually present some application problems from the beginning to the end of metal coils,” says Ljubomir Jevtić, Impol’s Coil Coating Line Manager. “Until today, we have sold 99% of our pre-painted metal in

Europe, especially Germany, Holland, Italy and Poland. Thanks to our ability to meet even the most specific needs, we have now greatly increased our market share in Russia, thus becoming suppliers of many exclusive projects such as the new infrastructure for the 2018 World Cup.”

Impol is highly flexible, equipped with casting ovens, hot and cold rolling mills, coil coating line and hot-lamination section. Over the years it has used more than 1000 different coatings. Its coil coating line operates at a speed of 60 metres/minute and ensures

© Sevalcon



Figure 3: The Dubai Gold shade.

**“In 2013, Impol started a new coating line that enabled it to dramatically change its product portfolio, positioning itself in a very high-end market segment. From the beginning, Impol focussed on special products for architecture and infrastructure. In these sectors, quality is everything. Thanks to the new advanced coil coating line, they can finally offer structural aluminium for iconic buildings with special aesthetic effects and very high aging resistance performance. At the same time, Impol can ensure quality consistency also with very high volumes, which is the most critical issue when it comes to producing special finishes.”**

uniform coating thicknesses and perfect film spreading along the whole coil surface. In order to achieve this quality result, the Serbian coil coater cooperates closely with its paint suppliers in terms of both development of the coating and regulation of the line based

on the characteristics of the product to be applied. Therefore Impol Seval insists with its paint suppliers on fast and efficient technical service and collaboration in matching the coatings to the needs and requirements of the coil coating line in Sevojno, emphasizing a high level of satisfaction with the cooperation with the supplier SALCHI Metalcoat.

SALCHI METALCOAT

# Top Quality Coil coatings

Since 1978 coil coatings for building, industry, and packaging

for  
Aluminium  
closures



for  
TAB  
stock



for  
Valve  
caps



for  
Food  
containers



for  
Pharma  
caps



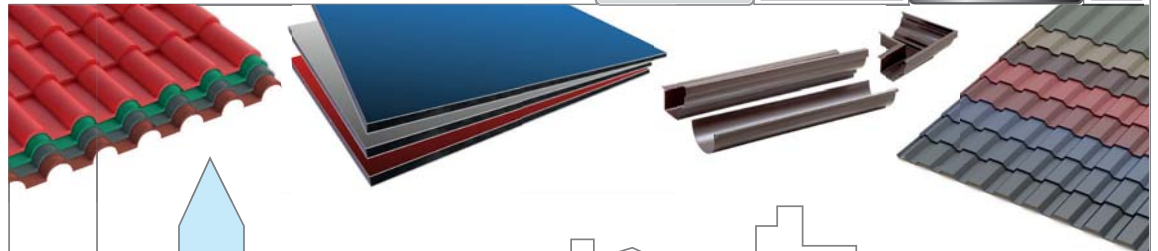
for  
Indoor

- Antifinger for stainless steel
- High gloss PE coating
- Laminated system



for  
Outdoor

- Anti-skid coating
- Copper imitation
- PE coating
- PUR/PA cycle
- PVdF cycle
- Wood effect
- Wrinkled coating



**Innovative** coil coatings  
**Worldwide** market presence  
**High performance** paints and inks



Salchi Metalcoat Srl

Viale dell'Industria 3/A-3/B - 20875 Burago di Molgora (MB) ITALY

Ph. +39 039 6251824 Fax +39 039 6251829

E mail: info@salchirh.it - www.salchimetaloat.com





**Customisation, performance, and special effects: the three pillars of Impol's success**

Impol works in close contact with clients and architectural firms. "Before approving a certain coating product, we supply many different samples, all with customised colours. This is our strength," says Milos Popovic, who manages the relationships between Impol and its Russian clients.

"Very often, the choice falls on colours and effects that combine several different samples. Architect always require specific coatings for their projects: that is why it is important that the paint supplier selected is able to offer customised products. Moreover, time is of the essence: we do not have months or years to develop a coating that meets the architects' needs. Impol is well known on the market for the



**Figure 4: Zaryadye Park is the largest green area in the city of Moscow, featuring modern high-tech infrastructure.**

© Sevalcom

short time (Fig. 5). The choice to rely on an Italian partner also stems from Italy's reputation in terms of aesthetics and design." "As for performance, PVDF products account for 90% of the coatings used for our projects in Russia. They are the only coatings that can ensure exceptional aging resistance, colour retention, and no need for maintenance over very long periods of time. Our paint

speed of its deliveries: our paint development partners must be equally timely," states Popovic. "For example, for the cladding of Moscow's VTB Arena, we developed a complete ocean-inspired collection in a very

suppliers must therefore also be expert in the use of PVDF raw materials in special effect products," says Milos Popovic. "Furthermore, they must be able to solve any colour matching problems that may

**“ Besides the Luzhniki Stadium, which exceeded the expectations of both investors and Football Federation officials, Impol has worked on several international airports in the Russian cities of Rostov, Saransk, Volgograd, and Perm. Russia is in fact making huge investments in its infrastructure, not only for the FIFA World Cup but also as a part of a larger country development project.”**

© Sevalcom



**Figure 5: The ocean-inspired colour range developed by Impol Seval in collaboration with the coating supplier Salchi Metalcoat.**

occur between pre-painted aluminium and aluminium profiles, which are traditionally powder coated. Providing a customised product exactly in line with the architects' ideas is not enough: such coating must also harmonise with the paint products made by other suppliers for different components of the structure. Finally, a crucial requirement for Impol is the fire resistance certificate: it enables our aluminium to be used in airports, commercial and financial buildings, hospitals, schools, stadiums, and all types of infrastructure that provide access to the public. I think that Impol is the only pre-painted aluminium producer to have this certificate in Russia."

**Russia: great excitement in architecture**

Besides the Luzhniki Stadium, which exceeded the expectations of both investors and Football Federation officials, Impol has worked on several international airports in the Russian cities of Rostov, Saransk, Volgograd, and Perm. Russia is in fact making huge investments in its infrastructure, not only for the FIFA World Cup but also as a part of a larger country development project (Fig. 6). "We participated in the realisation of one of the most important projects implemented in Moscow in the last few years, Zaryadye Park, rising on the ashes of the colossal 7000-room Rossiya Hotel, demolished in 2008. Inaugurated on September 9, 2017 on the occasion of the birthday of the

Russian capital, which turned 870 years old, Zaryadye Park is the largest green area created in the city in the last fifty years. Here, modern high-tech structures can be admired, such as the "suspension bridge" on the Moskva River, an underground glacier, and the honeycomb roof of the Philharmonic Hall," says Milos Popovic. "A very metallic finish that we called Silver Charge has been chosen to enhance the modernity of this structure. "We collaborated with Salchi also for this project because it is a coil coating manufacturer particularly inclined to produce specialty coatings – exactly what we are looking for. On the other hand, Impol has a great expertise in the coating of aluminium coils: they are able to perfectly coat very thick aluminium strips with an impressive final quality, even with "difficult" products such as PVDF."

"It should also be noted that Salchi's coatings are customised not only in terms of colours, effects, and performance, but also based on the characteristics of our application line, which its engineers know very well," says Ljubomir Jevtić from Impol. "Each coating line has its own influence on the application process, which can affect the finishing results. However, our projects require uniformly perfect surfaces from the beginning to the end of coils. That is why we have fully automated our coating process, which is adjusted from time to time depending on the type of coating product to be applied, and we monitor the thickness of both the tape to be painted and of the coating layers applied with three different measurement and control devices."



Your **efficiency,**  
our **innovations.**

Visit us at the PaintExpo!  
17 - 20 April 2018, hall 3  
Booths 3228 · 3230 · 3328 · 3330

Coating. Bonding. Sealing.  
Efficiency and highest quality.



## Characteristics of the coating system

From a technical point of view, the Kynar 500®-based PVDF coatings used by Impol Seval guarantee a minimum outdoor service life of 20 years. Impol generally applies two or three-coat systems, depending on customer requests. "In some special cases, metallic/iridescent effects may call for the application of an intermediate layer and a topcoat," explains Jevtić. "Normally, the former gives the surfaces corrosion and ageing resistance characteristics, while the latter creates the special effect. At other times, the special effect is already present in the intermediate layer and the topcoat improves and protects it. The pre-treatment cycle is the same for all our products."

## Aluminium: a protagonist of modern times

Modern times have seen the rise of metal, and in particular of aluminium,

© Sevalcon



**Figure 6: Moscow's Crocus City Oceanarium, another impressive and futuristic structure built by Impol Seval**

as the preferred building material, especially thanks to its durability, design versatility, lightness, and aesthetic characteristics. Preserving the beauty of a building for a long time goes far beyond aesthetics. Maintenance-free materials, such as PVDF coatings, enable to

significantly lengthen the maintenance intervals of structures, reducing their management and maintenance costs. They please the eye, preserve cities from the ugliness of decadence, and allow to pass the heritage of contemporary society on to future generations. ○

## Salchi – Arkema: a winning partnership since 1963

Established in 1963, Glidden-Salchi (**fig. A**) was the first licensee of the Kynar material. In that same year, Pennwalt (Cleveland, Ohio, USA) decided to start a licensing program to ensure high quality for the end users of PVDF coatings formulated with Kynar resin.

When, in 1976-77, the industrial Group led by the Brenni family acquired Glidden-Salchi and turned it into Salchi Spa, the license formally passed to the new legal entity. Since then, Salchi and Arkema (the current manufacturer of PVDF Kynar 500®) have been partners in the formulation of surface materials aimed at enhancing the aesthetics, decoration, protection, and durability of building skins.

Over the past fifty years, Arkema has conducted several studies on the



© Salchi Metalcoat

**Figure A: The inauguration of the Glidden-Salchi plant in 1963.**

aging of coatings, testing different combinations of pigments and additives in PVDF Kynar 500®-based formulations. This makes the technology licensees 100% sure about the aging behaviour

of their coating products, with positive effects along the entire value chain up to architects, who can be 100% sure of the durability of their creations' look for fifty years.

As a licensee, Salchi has always followed the guidelines provided by these studies and it is therefore able to offer solid guarantees to all its customers. The fun fact about the

PVDF Kynar 500® program is that some samples have been exposed in Florida for the last fifty years, and we have absolutely no idea if one day they will start to deteriorate.