

*Flame retardant*

*UV-Stabilization*

*Colour on request*

*ISO Norm tested*



**FLAME  
RETARDANT**

**MASTERBATCH**  
*for a lifetime*

## **BRINGING LIFE** *to plastics*

In Antiquity, sports were not only entertainment for the people, but more a way to gain political support and pay homage to the Gods. Today, stadiums and arenas should no longer be places to spend 90 minutes watching a favourite team. They have become places of entertainment, providing astonishment to keep visitors engaged for longer periods of time before and after the event.

Stadium development is a complex process that can be broken down from initial vision to the grand opening of the facility. Numerous parties are involved. Due to the high complexity and breadth of technical skills required, it is of paramount importance to engage specialists, experienced personnel and consultants during the various phases.

## **GABRIEL-CHEMIE STADIUM SEATS**

**30 years of uninterrupted & successful deliveries**

**More than 2.5 million seats**

**Top class supplier**



**BRINGING LIFE**  
to plastics

**FIRE STANDARD**

COUNTRY	CLASSIFICATION	MATERIAL	DOSAGE %
ITALY	CLASS 1	PP	10
	CLASS 1	Glass fiber filled PP	15
	CLASS 1	PA6	15
FRANCE	CLASS M2	PP	10
	CLASS M3	PP	6
	CLASS M3	Glass fiber filled PP	10
	CLASS M4	PP	5
USA	CLASS V2	PP	10
	CLASS V0	PP	100
UK	CLASS CRIB 5	PP	15
SWITZERLAND	5.2	PP	10
EUROPE	CLASS Bs1d0	PP	10
SPAIN	CLASS M2	PP	10
GERMANY	CLASS B1	PP	10
	CLASS B1	PA6	15

Gabriel-Chemie developed more than **100 Codes for Virgin Polymer** for injection molding and blow molding. Therefore we are able to offer prices for the market in a short amount of time.

The UV tests were made for products, using the formula for FR+UV+Colour for PP.

**The irradiance periode with laboratory light was set to 10.000 hours.** The results show variances in gloss and colour.

## UV-TESTS

Tests according to **ISO 4892/2** were conducted for the following products:

**90% PP + 10% MAXITHEN PP UVFRB 1 YELLOW similar to RAL 1021**

**90% PP + 10% MAXITHEN PP UVFRB 1 BLUE similar to RAL 5005**

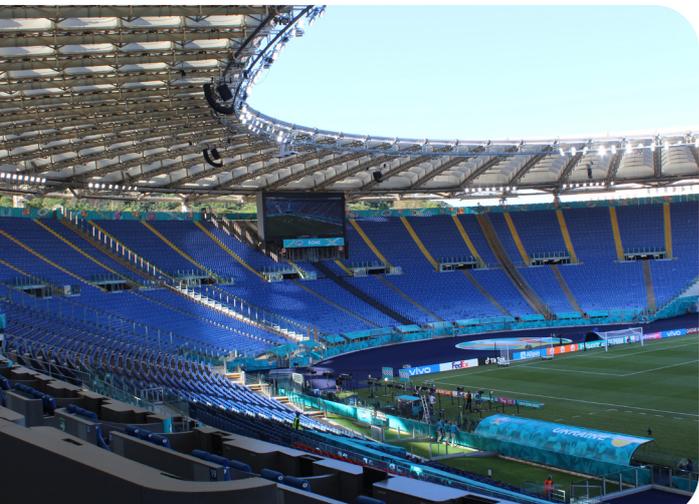
**90% PP + 10% MAXITHEN PP UVFRB 1 RED similar to RAL 3000**

**90% PP + 10% MAXITHEN PP UVFRB 1 GREEN similar to RAL 6011**

All references available upon request.



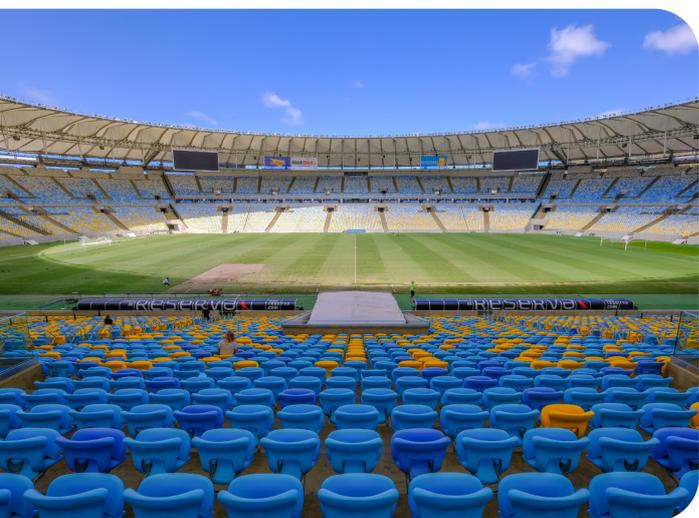
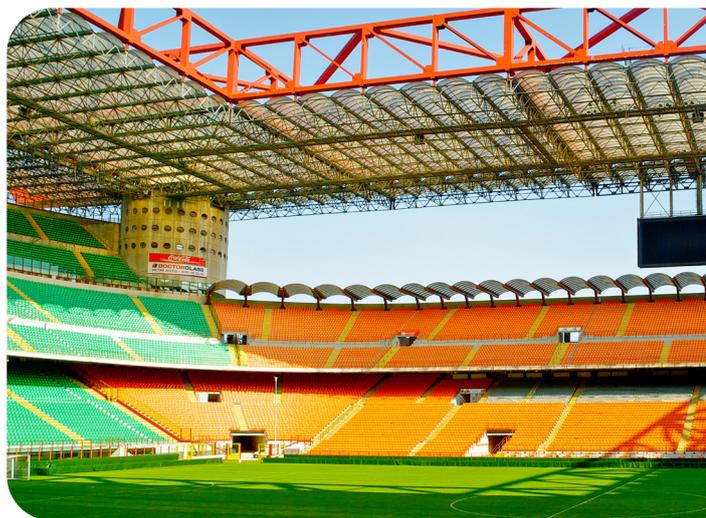
## EXAMPLES OF OUR MASTERBATCH IN USE



### **Olympic Stadium Rome**

Polypropylene - Injection molding  
73.000 Seats

**San Siro Stadium Milan**  
Polyamide 6 - Injection molding  
80.000 Seats



### **Maracanà Stadium Rio de Janeiro**

Polypropylene - Extrusion blow molding  
80.000 Seats

## EXAMPLES OF OUR MASTERBATCH IN USE



### Wanda Metropolitano Madrid

Polypropylene - Extrusion blow molding  
68.000 Seats



### Allianz Arena Munich

Polypropylene - Extrusion blow moldig  
75.000 Seats

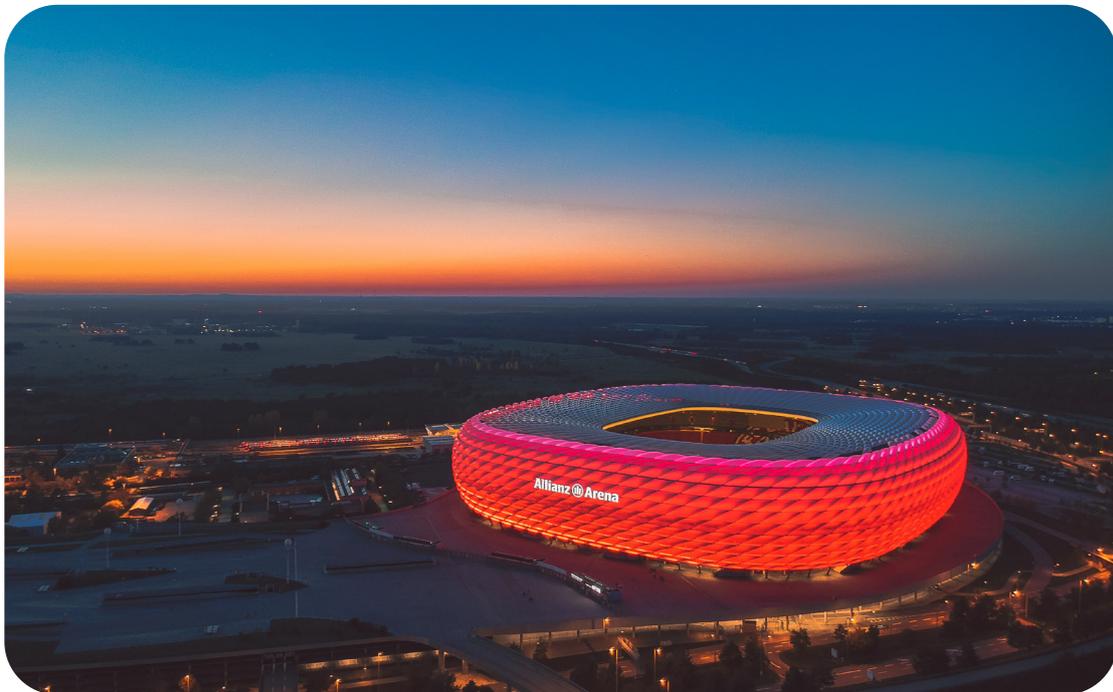


### Olympic Stadium London

Polypropylene - Extrusion blowmolding  
66.000 Seats

## **THE SUSTAINABLE STADIUM**

Technological, sustainable, modular according to needs and the sporting calendar, and above all usable not only during the match, but seven days a week. These are the stadiums of the future: complex infrastructures where the sporting event becomes part of a broader offer of services ranging from entertainment to cultural events, from shopping to catering. And where the issue of environmental sustainability is central, as much for construction techniques as for energy consumption and waste treatment. They are modern works, with a significant impact in economic terms for the clubs, but also for the allied industries.



A central element of the new engineering course related to the construction of modern stadiums is their sustainability. In this regard, FIFA has drawn up a set of guidelines. According to these guidelines sports infrastructures must be energy-efficient; they must make maximum use of natural light to reduce energy consumption; they must provide for the use of sustainable building materials, possibly from the facility's geographical proximity; they must include water-saving and water management measures, as well as efficient waste management. In essence, they must be structures designed to meet the most current sustainability criteria.

## **THE SUSTAINABLE STADIUM**

Gabriel-Chemie Group has developed a series of masters that can be used in combination with rPP. These masters confer a highly aesthetic result without coloration constraints, flame-retardant performance conforming to the Italian standard (Class 1 - UNI9174), a class fully comparable to the German B1 according to DIN 4102 and the French M2 class. Also the products offer good light-tightness performances according to the parameters dictated by the European standard EN 13200, valid for the stadium seating.

### **The Challenge**

- To comply with flame retardant norms for stadium seats
- Easily processed products
- To comply with colour variation according to the EN 13200-4 norm

### **The Solution**

- Full range of colours available
- UV-tested products
- Products meeting the requirements of the norm

### **The Impact**

- We offer products that are safe
- At the same time, the products are aesthetically appealing
- Sustainable solution with the ability to use recycled material

All references available upon request.