

Practice to be assessed and included in the Guidelines

Number/code: OM/SM24

Title: RECYCLED PLASTIC SEATS

Guidelines section:

<input type="checkbox"/>	Governance	<input checked="" type="checkbox"/>	Operational management		
		<input type="checkbox"/>	<i>Context of the event</i>	<input type="checkbox"/>	<i>Procurement</i>
		<input type="checkbox"/>	<i>Event</i>	<input type="checkbox"/>	<i>Mobility and logistics</i>
		<input checked="" type="checkbox"/>	<i>Stadium management</i>	<input type="checkbox"/>	

Description:

It is quite common for stadium’s managers to replace a significant number of seats after every match season. Seats are made from plastic and tend to be not very resistant thus supporters easily break them during matches.

The company Revet Recycling has recently launched the initiative “Re-sit down and jump for goal!” aimed at making stadium seats in recycled plastic.

Thanks to this project, 3,000 seats of the stadium of Pontedera (a football team playing in the Italian Legapro) were substituted with seats partially made of recycled plastic (30%-40%). The recycled material is named “plasmix” and derives from plastic containers (flacons, bottles, caps, lids etc.) recovered and recycled thanks to the separate waste collection system of Tuscany.

The creation of this innovative seat is the result of an ambitious R&D project carried out by Revet in cooperation with Omsi, a company leader in the production of stadiums seats. The main challenge was to find the proper combination of recycled and virgin plastic materials in order to ensure the fulfilment of the FIFA’s flameproof seats requirements. The final prototype passed both the mechanical and flameproof checks and is ready to enter the market.

The Life Tackle project has contributed to spread this good practice by promoting and supporting this initiative launched at the stadium of Pontedera. Similarly, thanks to LIFE Tackle, the Olympic stadium in Rome substituted damaged seats made of virgin plastics with seats made of 40% recycled plastics. In this case, a complete substitution of all the stadium seats was not initially foreseen (the stadium has a capacity of more than 50,000 seats); however, they needed to replace about 600 seats that were damaged. In the future, they will continue substituting old damaged seats made of virgin plastics with seats made of 40% recycled plastics.

Environmental benefits:

This project reduces the withdrawal of raw materials from the environment of about 30%-40%, minimizing the environmental impact of the oil industry - emissions deriving from its extraction, processing and transport. Furthermore, using 30% or 40% of recycled mixed plastics doubles the self-life of these materials, taking them away from the final disposal (energy recovery or landfill).

In particular, traditional seats are made of 1.75 kg virgin polypropylene (baseline), while the seats made of 40% recycled plastics are made of 0.7 kg of recycled plastics and 1.05 kg of virgin polypropylene. Based on SimaPro software for LCA, the environmental benefits of the adoption of recycled seats compared to virgin plastic seats in stadium reduces the carbon footprint from 5.34 kgCO₂eq to 3.47 kgCO₂eq (-35% of carbon footprint reduction) and the water footprint from 1.65 m³ water eq to 0.98 m³ water eq (-41% of water footprint reduction). This means a saving of 5,601 kg of CO₂ and 2,601 m³ equivalent.

With regard to this practice applied to the Olympic stadium in Rome, it is estimated that by substituting 600 seats in 2021 and 600 seats in 2022 (total 1200) – i.e. during Life Tackle timespan – the environmental benefits would translate into savings of 2,244 kg of CO₂ and 804 m³ of water eq. The carbon emission savings could be significant on the long run, especially if the stadium substitutes all its seats. Furthermore, it could also have a reputational positive impact and educational and engaging effect if properly communicated to supporters.

Economic benefits:

Virgin raw materials are subject to speculative dynamics and are particularly affected by schizophrenic and unpredictable fluctuations in the cost of oil, which prevents any long-term expenditure planning. Revet Recycling guarantees constant prices over time for its recycled polyolefin granules, because it reintroduces post-consumer flows of materials that are totally independent of oil price dynamics.

Revet is now trying to optimize the production process in order to lower the final price that is still higher than the price of seats made of 100% virgin plastics.

Moreover, the cost of seats made of recycled plastic lowers if the stadium orders a larger number of seats.

Applicability and replicability potential

Every stadium could start substituting its seats with seats made from recycled materials. However, right now, Revet Recycling is the only known producer of such a type of seats thus, it may have production limits. Furthermore, the farther the stadium from Tuscany, the higher the CO₂ emissions due to seats transport thus, it could be reasonable to arrange big orders with the aim of optimizing logistics' environmental impact.

Sources

www.revet.com

www.omsi.it

<https://www.toscanachiantiambiente.it/stadi-ecologici-a-pontedera-le-prime-sedute-al-mondo-di-plastica-riciclata/>