

ECO TILES Project

ECO innovative methodologies for the valorisation of construction and urban waste into high grade TILES



with the contribution of the LIFE Programme of the European Union

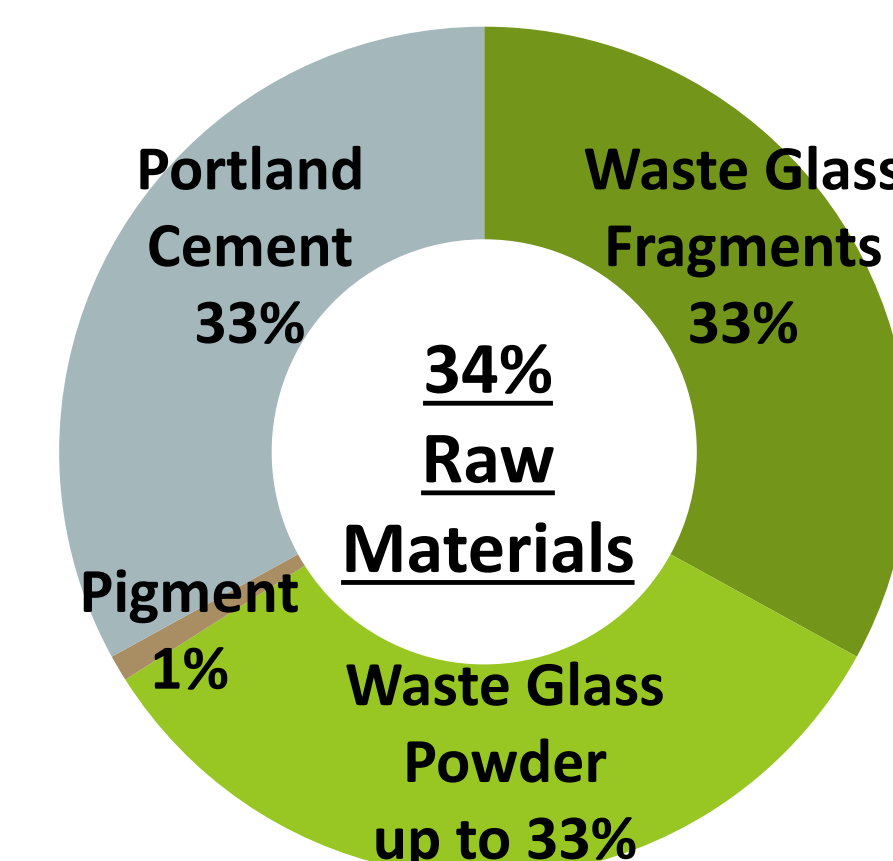
SUBSTITUTING RAW MATERIALS WITH WASTE FOR NEW ECO-SUSTAINABLE BUILDING PRODUCTS (ECOTILES)

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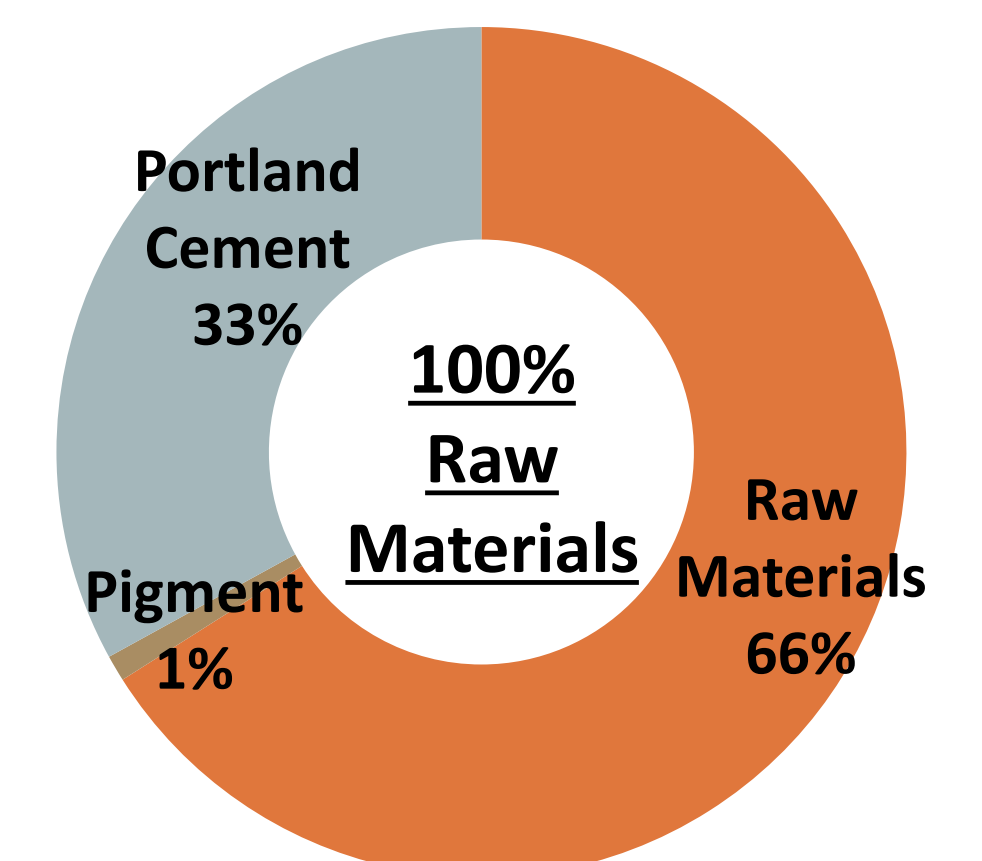
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ECO TILES (LIFE14 ENV/IT/000801) is a research project financed by the LIFE program of the European Union, under the topic ENVIRONMENT - WASTE. The project is a synergy between the University of Camerino and the Grandinetti company. The research demonstrated the possibility to produce fully recycled Terrazzo tiles using recycled glass, ceramic and Construction & Demolition Waste (CDW). The new products were found to have a substantial less environmental impact (up to 21% of CO₂ saved) compared to the traditional tiles as demonstrated by the Life Cycle Assessment (LCA)

ECO TILES Terrazzo



Traditional Terrazzo



The LIFE ECO TILES typologies

The ECO TILES have been experimented in 3 different typologies: the “standard” tile is similar to a traditional tile but contains up to 70% of waste material. The “extra ware” aims to valorize the technical performance of the product, with a high resistance to abrasion. The “design” tile allows a wide range of colors and patterns, also for custom-made productions.



Single and Double Layer ECO TILES

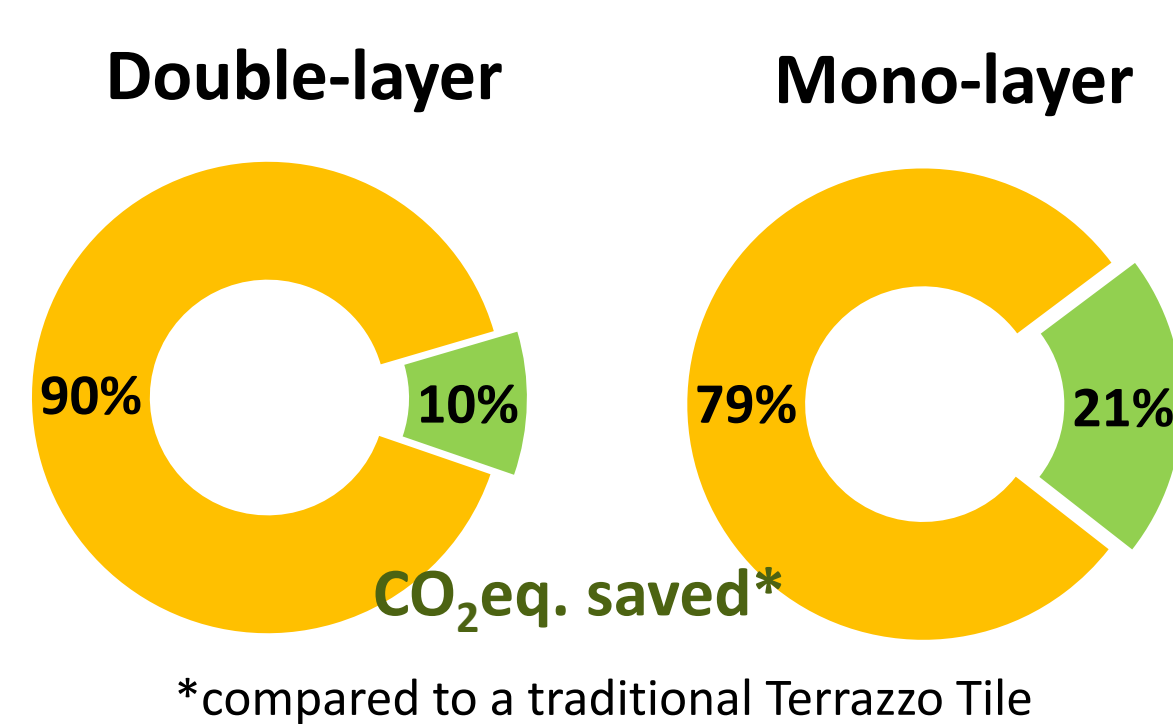
The Single Layer tiles are made of one layer, polished, composed of recycled glass fragments, cement, pigment and a powder (marble, glass or quartz). The Double Layer tile adds to the bottom a second layer composed of cement and 75% of crushed CDW. The Single Layer is thinner, lighter and it is more suitable for the preparation of the “design” tiles. Double Layer tiles are heavier and sturdier, a perfect fit for the “extra ware” type and for high traffic environments.



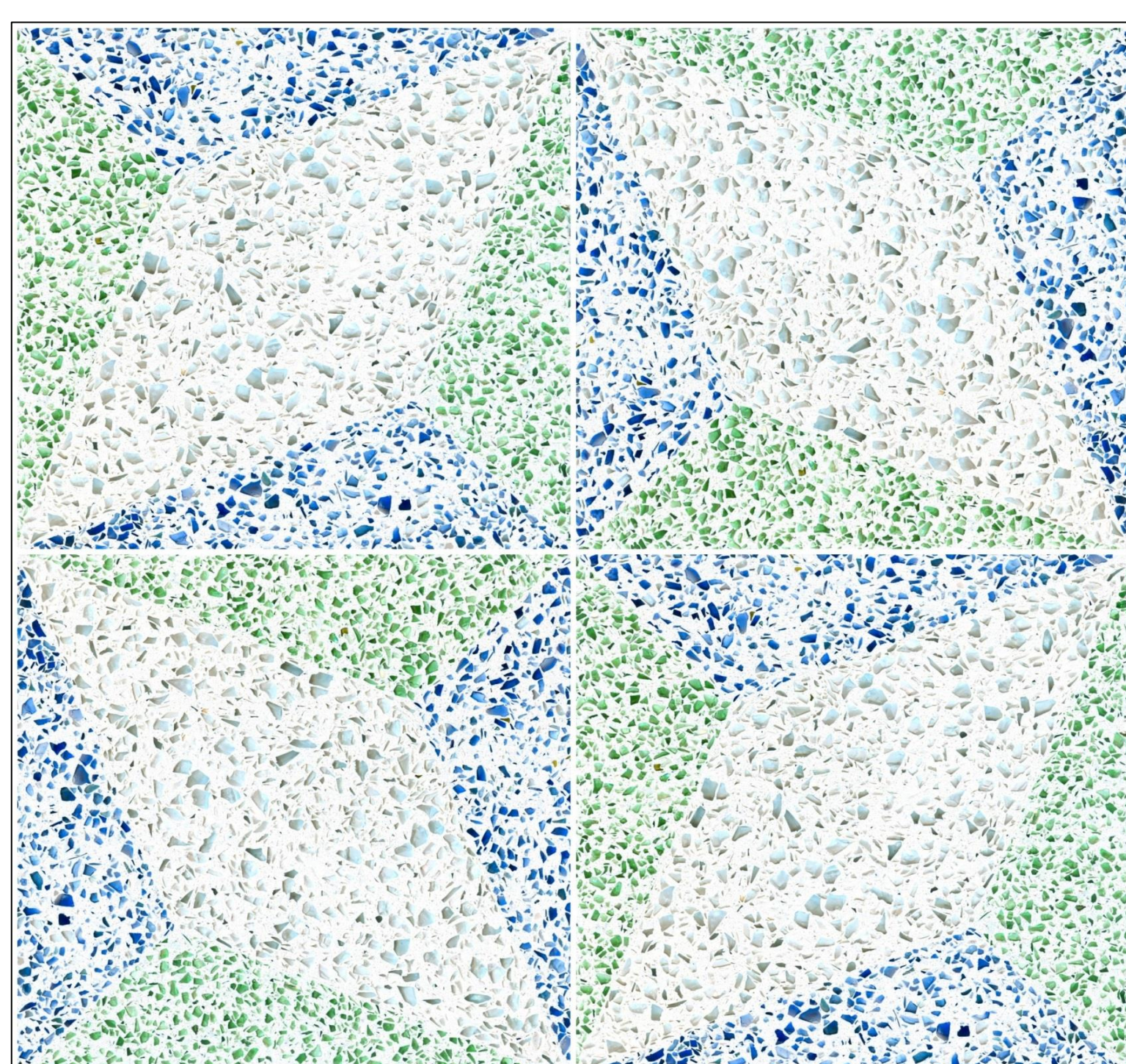
Single-layer ECO TILES

Double-layer ECO TILES

LIFE ECO TILES LCA has demonstrated that the substitution of quarried raw material with recycled glass (top layer) and CDW (bottom layer), and the use of an innovative curing process enable the reduction of the impact on the environment in terms of Global Warming Potential of 21% for mono-layer and 10% for double-layer tiles.



ECO TILES «Design» Compass



Composition:
33% White Portland Cement
33% Marble Powder
33% Waste Glass Granulate

High customization in pattern and colors

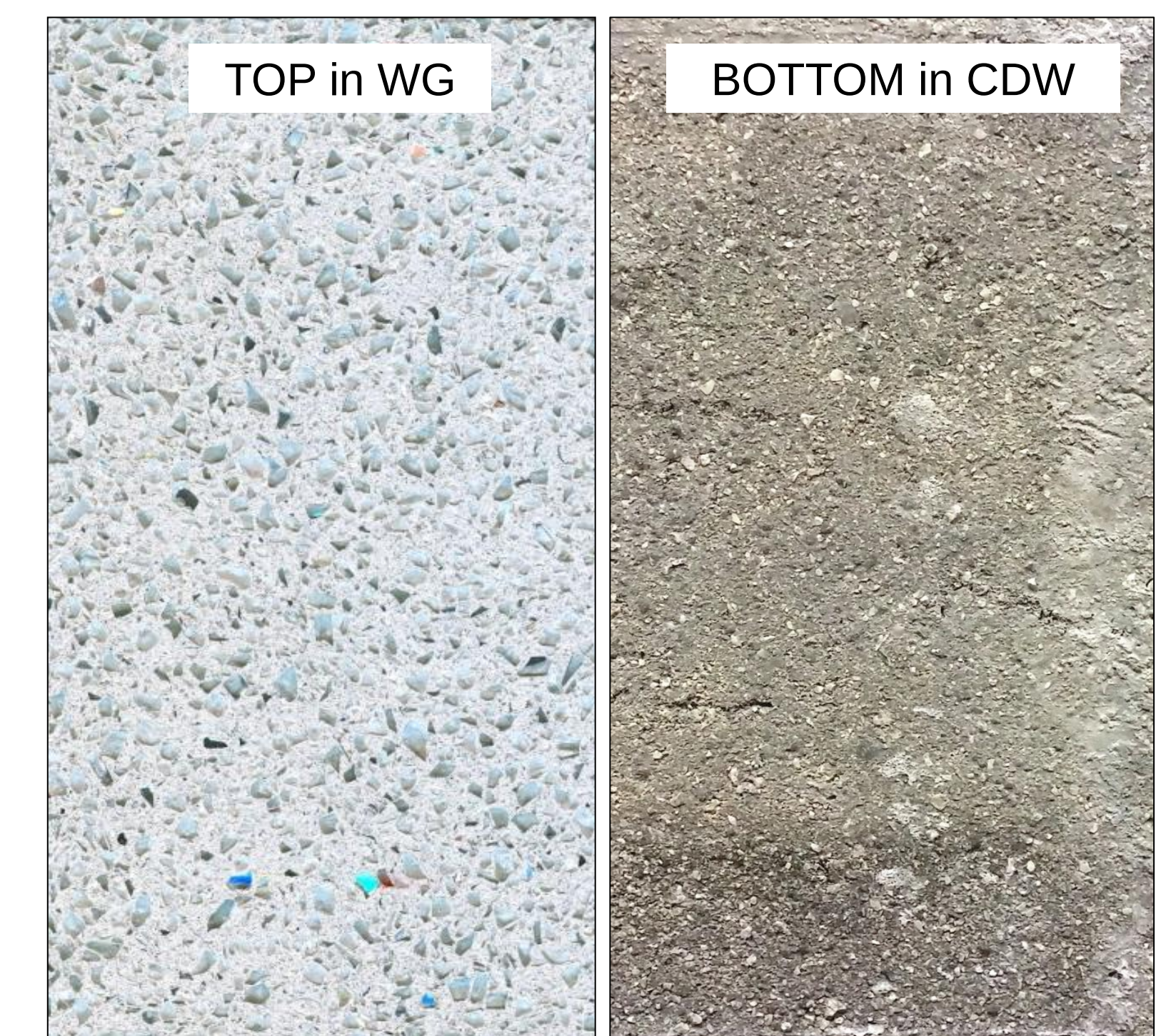
ECO TILES «Extraware» Mirrors



Composition:
33% White Portland Cement
33% Glass or Quartz Powder
33% Waste Glass Granulate

High resistance to abrasion

ECO TILES «Standard» Double-Layer



Composition:
33% White Portland Cement
33% Waste Glass Powder
33% Waste Glass Granulate
bottom: 25% Portland Cement and 75% CDW

High content in waste materials