



SANITSER

Project: LIFE12 ENV/IT/001095

SANITSER

**SANITaryware production: use of waste glass
for Saving Energy and Resources**



Technological innovation as industrial development opportunity

Coordinating beneficiary: Minerali Industriali S.r.l.

Associated beneficiaries: G.E.M.I.C.A. S.r.l.
Life Cycle Engineering
SE.TE.C. S.r.l.

MINERALI



INDUSTRIALI



www.sanitser.eu



Main Project Objectives

Reduction
of firing temperature
of about 100°C



Reduced costs
for primary raw materials
and their transport



CO₂
emission
reduction



Improving the environmental impact of the sanitaryware production process replacing natural raw materials (up to 40-50%) with glass cullet from urban waste disposal and other recycled materials in the ceramic blends formulation.





ENVIRONMENTAL ACHIEVEMENTS

*Environmental benefits of SANITSER process respect to traditional technology are quantified through a **Life Cycle Assessment (LCA)**, a scientific and internationally recognized methodology.*

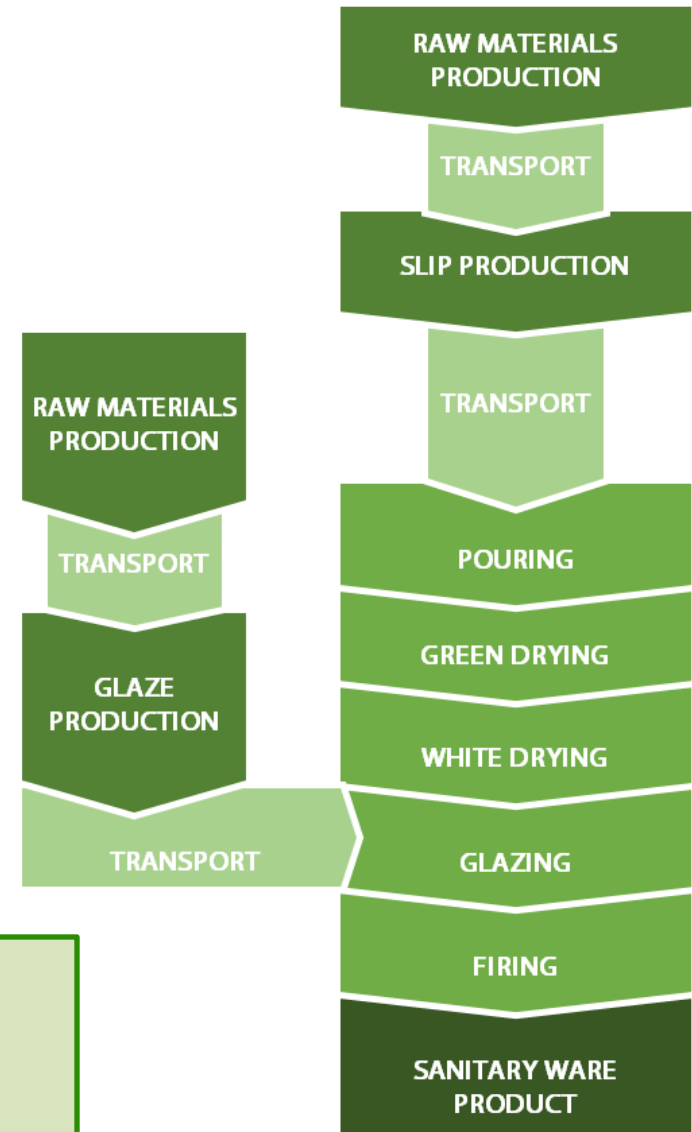
Reference standards:

ISO 14040:2006 Life cycle assessment - Principles and framework

PCR 2012:01 V 2.01, "Construction products and construction services"

System boundaries:

From cradle to industry gate



Comparison:

Traditional production process

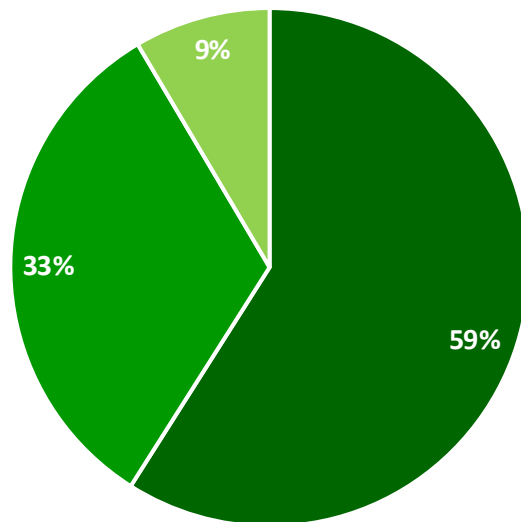
VS

SANITSER innovative process – Industrial stage





ENVIRONMENTAL ACHIEVEMENTS (LCA)



- Primary material
- Pre-consumer secondary material
- Post-consumer secondary material



Recycled content of SANITSER product **41 %**

Reduction of CO_{2eq} emission from firing: **- 18 %**

Reduction of raw materials transportation distances: **- 45 %**

Total emission of CO_{2eq} For all the phase process: **- 10 %**

Pre-consumer material:

Material diverted from the waste stream during a manufacturing process, excluded reutilization.

Post-consumer material:

Material generated by households or by facilities in their role as end-users of the product which can no longer be used for its intended purpose.





ECONOMIC ACHIEVEMENTS

Compared to the traditional technology, SANITSER process allows significant savings of costs related to raw materials and energy consumption.

The comparison has been performed using Life Cycle Costing (LCC), a methodology based on ISO 15686-5.

COST SAVING

Results are referred to 1 kg of sanitary ware product

RAW MATERIALS

up to
-15%



TRADITIONAL
VITREOUS
CHINA



ENERGY CONSUMPTION

up to
-10%



TRADITIONAL
VITREOUS
CHINA

