

PURE GRP
PIPES AND MODULES

FOR THE CONSTRUCTION AND
TRENCHLESS REHABILITATION
OF GRAVITY SEWER PIPES

www.marplast-grp.pl



Marplast Sp. z.o.o. was created on a foundation of experience and know-how of PPH Marplast – a long-standing manufacturer of polyester-and-glass composite products. Currently, the company manufactures laminates from resin saturated fiberglass with the core product portfolio of various types of pipes and modules for the construction and trenchless rehabilitation of man-accessible gravity sewers, both round and in other shapes. The company employs an experienced team of plastic molders with 20 years of experience who, over two decades, have gained know-how and skills in making pure GRP laminate structures, subject to UDT and TÜV approval. Marplast Sp. z.o.o. manufactures products only from pure glass reinforced plastic (PGRP), without the use of such fillers as silica sand. The products' walls are made of uniform GRP, internally coated with silicon carbide (SiC), which makes them exceptionally durable and abrasion resistant.

Product ranges:

- GRPipe system pipes, having a circular cross-section, from DN600 up to DN3500 mm, the standard length of 3 and 6 m; other lengths by special order, PN-EN 14364 standard.
- GRPanel system modules, having a non-circular shape, up to DN3500 mm (substitute diameter), the standard length of 3 m; other lengths by special order, PN-ISO 16611 standard.

Connection methods:

- with a seal
- laminated
- glued
- with expanded rubber

The pipes and modules are produced by two methods:

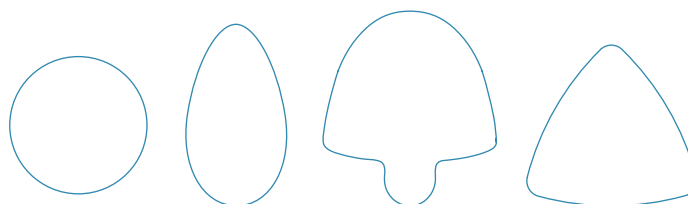
- by filament winding using a winding machine, for circular and non-circular convex shapes



- by hand lamination, for special shapes and connection fittings

Available shapes:

- circular | egg | bell | elliptic | parabolic | custom-designed



The National Technical Assessment ITB 2017/0154 rev. 2 issued by the Polish Building Research Institute (Instytut Techniki Budowlanej) in Warsaw gave positive assessment of the functional properties of PGRP MARPLAST construction products for the construction, and rehabilitation of non-pressure sewerage networks.

Marplast has implemented and applies a quality management system compliant with the requirements of the PN-EN ISO 9001:2015 STANDARD in the production of pure GRP pipes and modules for the construction and trenchless rehabilitation of sewage, sanitary and rainwater systems.



USE OF GRPipe & GRPanel®

CONSTRUCTION AND TRENCHLESS REHABILITATION OF GRAVITY SEWERS

- STORM, SANITARY, COMBINED, AND INDUSTRIAL GRAVITY SEWER SYSTEMS
- UNDERGROUND AND GROUND-LEVEL ROAD CULVERTS FOR WATER, OTHER PIPES, TUBES, AND NETWORKS
- MAN-ACCESSIBLE AND SMALLER SIZE OPEN CULVERTS LOCATED BELOW TRANSPORT INFRASTRUCTURE FACILITIES (related to roads, railroads, aviation)
- PGRP PRODUCTS IN CUSTOMIZED SHAPES

CONSTRUCTION OF

- SEWER MANHOLES
- WATER TANKS FOR NON-POTABLE WATER, AS WELL AS FOR SURFACE RUNOFF, SEPARATORS, AND FIRE WATER TANKS

FEATURES OF GRPipe PIPES AND GRPanel® MODULES MADE OF PURE GRP

Homogeneous wall structure

Monolithic wall design, without fillers; polyester or vinylester resin module wall reinforced with alternating layers of fabric and glass-fiber mat

Hydraulics

Roughness coefficient $k=0.08-0.10$ mm

Abrasion resistance

1. High abrasion resistance throughout the cross-section of the module wall due to its homogeneous design, contrary to modules with fillers, where only the external 2.5 mm layer is resistant to abrasion
2. Inner surface of GRPanel® and GRPipe (at least 1.5 mm thick) is coated with a layer with **silicon carbide (SiC)**, which increases by several factors the resistance to abrasion (Darmstadt abrasion test)

Flexibility

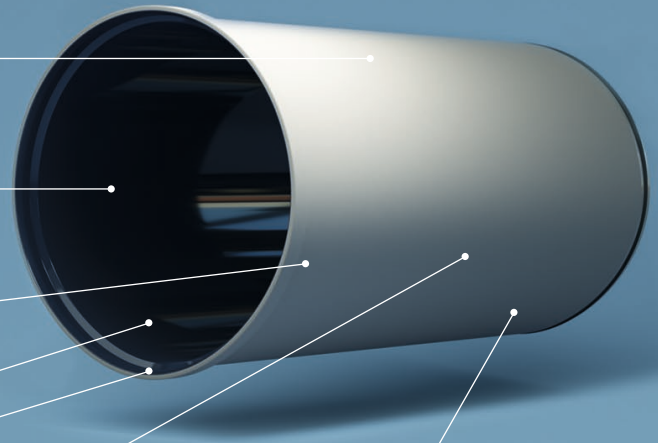
The module's flexibility ensures its optimal placement along the pipe bends

Impact resistance

The wall's design ensures resistance to mechanical impact

Light-weight

Easy assembly due to lower overall weight



SUMMARY OF RESISTANCE PARAMETERS OF PURE GRP CIRCULAR AND NON-CIRCULAR PIPES AND MODULES

Lp.	PARAMETER	MARPLAST
1.	structural load-carrying layer	made of n-number mat and roving fabric (bi-directional) layers, saturated with resin having ca. 40% of fiber-glass content
2.	content of materials in product as a percentage	glass-fiber and resin – 100%
3.	pH	pH 2–13
4.	flexural strength [MPa]	at least 240 MPa
5.	short-term modulus of elasticity [Young's modulus] [MPa]	at least 13,000 MPa



WARSZAWA, Burakowski mains



KRAKÓW, ul. Jeżynowa

GRPanel® OFFER

GRPanel® (GRPipe) from MARPLAST is not just a product, but an end-to-end service including:

- PRODUCTION AND DELIVERY of:
 - non-circular standard profiles
 - special profiles
 - circular profiles, mainly for man-accessible networks
- FREE SELECTION OF SHAPES, SIZES AND TYPES OF MATERIALS (RESIN)
- DESIGN SUPPORT
 - strength calculations
 - hydraulic calculations
- TRAINING AND CONSULTANCY DURING MODULE INSTALLATION



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