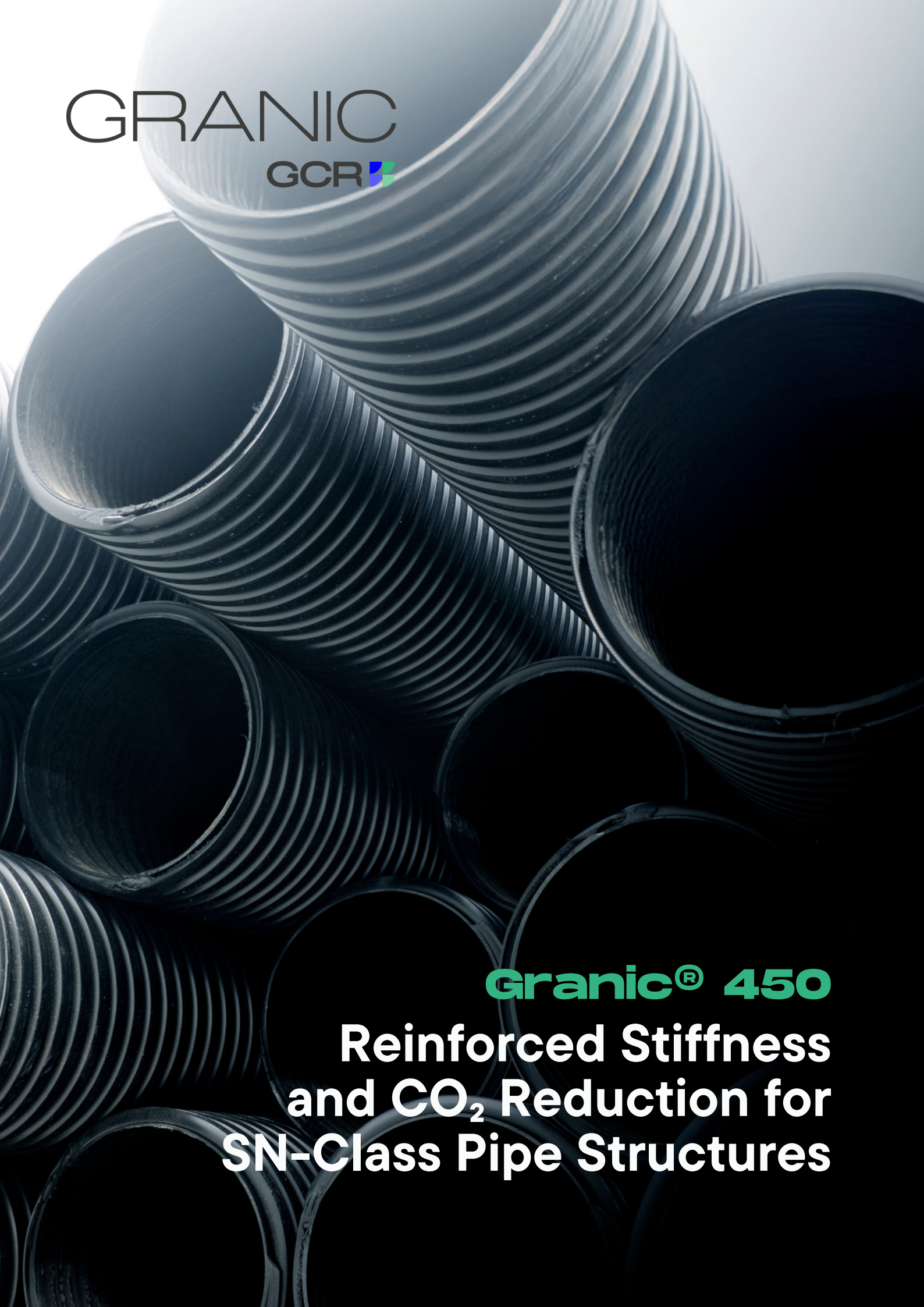




GRANIC
GCR 

Granic® 450
**Reinforced Stiffness
and CO₂ Reduction for
SN-Class Pipe Structures**

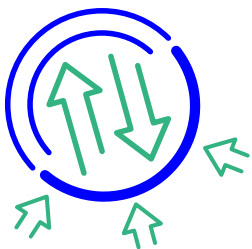
Discover Granic® 450

Reinforced Stiffness and CO₂ Reduction for SN-Class Pipe Structures

Better Ring Stiffness.
Improved Efficiency.
Lower Environmental Impact.

Granic® 450 is a high-performance talc-based masterbatch designed to reinforce **HDPE corrugated pipes**, particularly for **SN8 and SN16 stiffness classes**. It enhances **mechanical strength, dimensional stability, and processability**, enabling thinner, lighter pipe structures that meet or exceed ring stiffness and impact resistance requirements. By increasing compression and bending resistance while maintaining impact strength, **Granic® 450 delivers high performance without compromising durability**.

With **higher throughput** and reduced polymer usage, it also helps manufacturers boost efficiency and lower their environmental impact — supporting sustainability goals, including a **certified reduction in CO₂ emissions**.



Superior Ring Stiffness

Achieve SN8 and SN16 classifications with thinner walls.

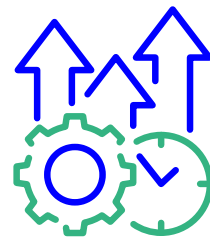
Boosts flexural modulus by up to 62%, reinforcing pipe structure without compromising impact resistance.



Lower Footprint. Higher Performance

Replace up to 25% virgin HDPE.

Reduce CO₂ emissions while improving processability and mechanical properties without compromising impact resistance



Productivity Gains

Higher output. Greater efficiency.

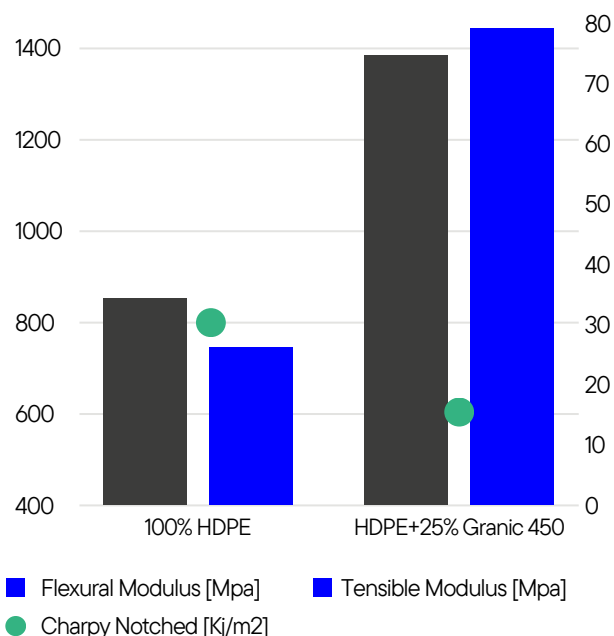
Improves extrusion stabilization, increases line speeds, and ensures consistent, energy-efficient production.



Discover Granic® 450

Proven Mechanical Reinforcement with Granic® 450

Granic 450 used at 25% compared to HDPE virgin



Granic® 450 delivers proven stiffness and stability gains in SN-16 and SN-8 class pipes with reduced polymer use and no compromise in impact resistance or processability.

■ +62% Flexural Modulus

- From **856 MPa to 1392 MPa** with 25% Granic® 450.
- Reinforces ring stiffness and structural rigidity, essential for SN8 and SN16 compliance.



+92% Tensile Modulus

- From **747 MPa to 1449 Mpa**.
- Boosts circumferential rigidity and long-term mechanical stability.



Maintained Impact Resistance

- **Charpy Notched Impact:** Ensures SN16 compliance with added stiffness improvements.

Additional Performance Benefits

- **Enhanced Dimensional Stability** Better resistance to deformation over time and under stress.
- **Thermal Shrinkage Control** Improved thermal behavior during cooling and post-processing.
- **Cost Optimization** Lower polymer usage while improving quality and stiffness.

Process & Productivity Benefits

Feature

Benefit

Higher thermal conductivity

Faster heating/cooling improves corrugator efficiency.

Improved processability

Faster extrusion stabilization, quicker startup and changeovers.

Higher Line Speeds

Enables greater productivity and throughput.

Low Moisture Content

Prevents talc-related humidity issues during processing.

Dimensional stability

Helps maintain surface quality and dimensional control.

Stable Extrusion

Reduces variation and improves repeatability in production.

Lower Environmental Impact

Sustainability

Granic® 450 reduces both CO₂ emissions and virgin polymer use with no loss of performance.

- **12%* CO₂ reduction** in typical pipe structures (Certified under ISO 14067:2018, Evaluation Period 2024)
- **Up to 25% virgin HDPE replaced** in the outer layer
- **Lower energy** use thanks to faster cooling and shorter cycles
- Supports regulatory and sustainability targets



Product Carbon
Footprint
Regular
Surveillance



www.tuv.com
ID 9105057179

Application Scope:

- Two-layer HDPE corrugated pipes
- SN8 (large diameter), SN16 (small diameter) sewer and drainage systems
- Outer layer dosage: 25%
- Structure: Outer (70%) / Inner (30%)
- Color: Dark grey

Why Granic® 450?

- Designed for SN8 and SN16 compliance
- Improves strength, stability, and processability
- Supported by GCR's Innovation Hub for trials, testing, and technical guidance
- Proven in industrial-scale pipe production
- Backed by reliable supply and logistics across Europe

Ready to Reinforce Your Pipes?

Contact our team to learn more about how **Granic® 450** can optimize your corrugated pipe formulations.

Granic® has the potential to reduce CO₂ emissions by up to 50% at dosages around 70%. However, actual reductions may vary based on the final application and the specific product used. All statements, information, and data presented herein by GCR PLASTIC SOLUTIONS GROUP S.L.U. (GCR Group hereinafter) are believed to be accurate but are for guidance only and are not to be taken as a guarantee or other representation for which GCR Group and its affiliates and subsidiaries assume legal responsibility. GCR Group expressly disclaims any and all warranties, either express or implied, including, without limitation, any

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