

INEOS

Olefins & Polymers Europe

Your partner with

ELTEX[®] TUB PP

The **efficient** solution
for non pressure drainage
and sewerage pipe systems

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ELTEX® TUB PP

Eltex® TUB PP grades provide the optimal combination of mechanical performances and processability

Eltex® TUB advanced Impact Copolymer PP grades produced with INEOS Olefins & Polymer proprietary Innovene process combine an excellent stiffness – impact resistance balance with a superior processability.

Eltex® TUB 433-NA00 has a ‘medium’ stiffness and an excellent impact resistance even at low temperature fulfilling the additional staircase impact test at -10°C required in some countries by EN 1852-1 and EN 13476-3 for installation at temperatures below -10°C.

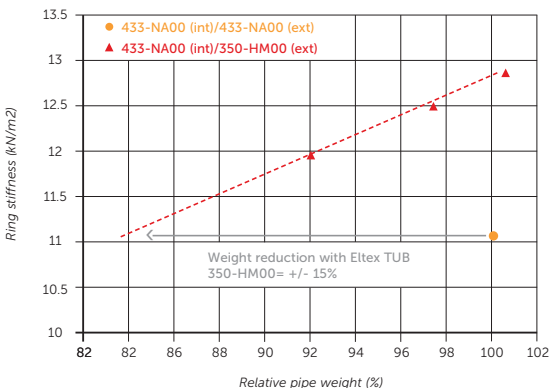
Eltex® TUB 350-HM00 belongs to the latest generation of High Modulus PP impact copolymer (EN 1852, SN8/S14 pipes). It exhibits a very high stiffness (E-Modulus=1900 MPa), a good impact resistance and enhanced long term thermal stability (OIT) while providing excellent processing behaviour.

	ELTEX® TUB 433-NA00	ELTEX® TUB 350-HM00
DENSITY <i>kg/m³</i>	905	908
MFR 230/2.16 (<i>g/10 min</i>)	0.3	0.3
CALCULATED E - MODULUS (<i>MPa</i>)	1500	1900
CHARPY IMPACT <i>strength notched 0°C (kJ/m²)</i>	18	12
OIT @200°C (<i>min</i>)	> 30	> 50

High Modulus PP – the low weight route

The superior stiffness of Eltex® TUB 350-HM00 allows significant decrease in pipe weight and/or pipe production with enhanced ring stiffness

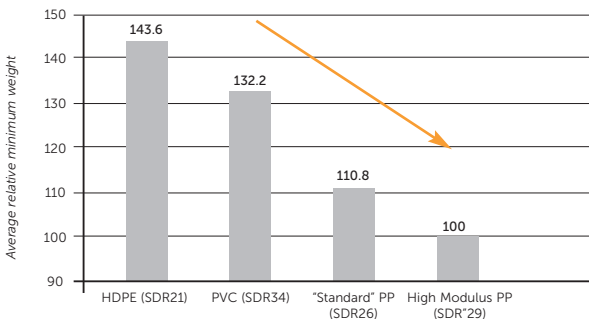
OD 315 mm corrugated pipes



Amongst commercially available High Modulus PP materials, Eltex® TUB 350-HM00 delivers one of the lowest pipe weight.

Superior mechanical balance converted to advantages in lowest pipe weight or innovation opportunity

Relative minimum weight of SN8 solid wall pipes

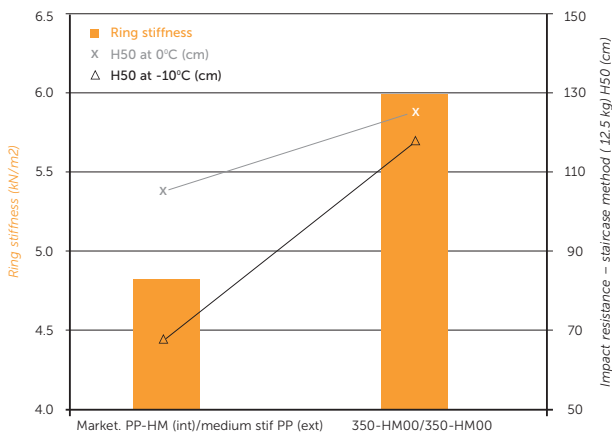


Superior pipe stiffness with impact resistance at its best

Thanks to our proprietary Innovene process and to an optimized polymer structure and additive package, Eltex® TUB 350-HM00 exhibits an enhanced stiffness/impact resistance balance and fulfils the staircase impact test at -10°C ('ice-crystal') even on corrugated pipes.



Ring stiffness – impact resistance
(300 mm SN4 structured wall pipes)



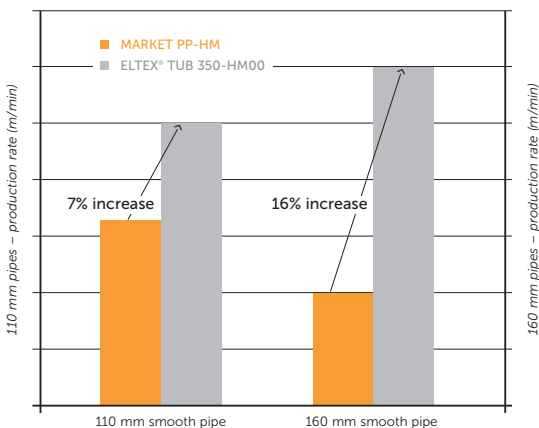
Enhanced processing behaviour

While Eltex® TUB 433-NA00 and Eltex® TUB 350-HM00 exhibit outstanding mechanical balance, both resins deliver an excellent processing behaviour. Therefore, both materials are suitable for the production of solid and structured double wall pipes (internal and external layers).

Compared to High Modulus PP currently available, Eltex® TUB 350-HM00 exhibits potential for enhanced processability (machine and extrusion conditions dependent):

- **Higher extrusion output** (same rpm) – higher throughput if extruder is limiting factor; energy savings
- **Lower extrusion temperature** (no overheating linked to PP crystallinity or rheological profile) – higher throughput if cooling is limiting
- Behaving better in corrugating process – no need for blowing pressure and corrugator torque increase
- Suited for in-line integrated socket production

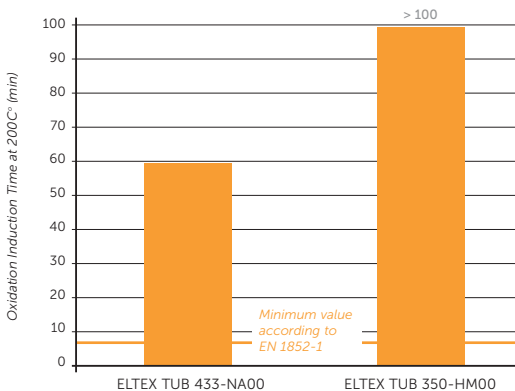
Eltex® TUB PP production rate



Long term thermal stability and pressure resistance

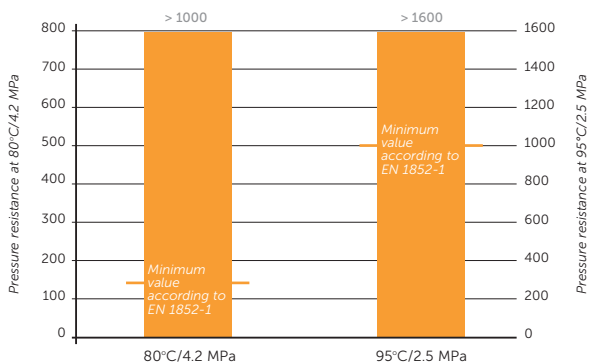
INEOS Olefins & Polymers Europe is committed to cope with all versatile production operating conditions

Thermal stability – OIT (typical values)



Eltex® TUB 433-NA00 and Eltex® TUB 350-HM00 meet the European standards for pressure testing of sewerage pipes

Pressure resistance



Success factors in non pressure drainage and sewerage pipe systems

Gravity pipes manufactured from PP offer many advantages over pipes produced with traditional materials:

- ❑ **Light weight** – lower transport and installation costs
- ❑ **Easy handling and installation**
- ❑ **Flexibility** – low failure rate
- ❑ **Corrosion free**
- ❑ **Excellent abrasion** and chemical resistance
- ❑ **Smooth & chemically inert internal surface** – no/less deposit and pipe plugging
- ❑ **Long service life** (delivering high durability networks)
- ❑ **Polyvalent in use** and suitable for different designs – broad conversion process window

Including material costs, installation costs, maintenance & repair costs, PP pipe systems provide a lower 'Cost-Over-Lifetime' versus traditional materials which benefits the complete value chain.



INEOS is one of the world's largest chemical companies. Founded in 1998, the company employs 15,000 people and has turnover of around 47 billion US Dollars.

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INEOS Olefins & Polymers Europe is a business leading European producer of olefins and polyolefins.

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INEOS Olefins & Polymers Europe offers a full range of high valued polyolefins solutions for selected market applications such as pressure pipes & fittings, sewage and drainage pipe and fittings and automotive, through dedicated sales and technical service teams focused on each market segment.



INEOS is a safe and environmentally responsible company. We are engaged on developing our sustainable agenda to improve our operations and to implement sustainable solutions for our customers. This is mostly via products that offer lightweighting, energy efficiency, durability (extended lifetime) or conservation of resources. We care.

For any further information please contact us at IneosPofCSC@ineos.com

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