




## Story: We were challenged to create a more sustainable watering hose product solutions

<b>Incumbent material:</b>	TPE and PVC solutions
<b>Replacement material:</b>	Santoprene® TPV grades
<b>Part/material requirement:</b>	<ul style="list-style-type: none"> <li>• Durability, puncture and abrasion resistance</li> <li>• Lightweight</li> <li>• Drinking water safe (NSF) – no phthalate or PVC</li> </ul>
<b>Customer needs/ value proposition</b>	<ul style="list-style-type: none"> <li>• 3 x lighter than incumbent solution</li> <li>• High flexibility on wide range of temperatures (-30°C)</li> <li>• Durability with &gt;300 psi burst strength</li> <li>• ECO-Design structures for a solution that is easier to recycle than EPDM</li> <li>• No kinks to retain water flow</li> <li>• The hose is flat when not in use making it easy to store</li> <li>• 43% CO<sub>2</sub> emission compared to FITT garden PVC hoses</li> </ul>
<b>Key design needs and challenges</b>	<ul style="list-style-type: none"> <li>• Combination of different grades maintains a balance of high puncture/abrasion resistance for the outer layer with a soft, flexible inner layer</li> <li>• Excellent processing - high extrusion speed with limited die drool</li> <li>• Good laser printability of the outer layer grade</li> </ul>
<b>Key commercial success factors</b>	<ul style="list-style-type: none"> <li>• Close collaboration to support the customer’s transition from using PVC to Santoprene® TPV</li> <li>• Product consistency minimizes waste production</li> <li>• Recycling paths aligns with the customer sustainability strategy</li> <li>• Customer meeting to present lab and testing facilities which demonstrated our capability to support customer developments and scale-up to production</li> </ul>

Made with  
**Santoprene® TPV**  
from Celanese

- Light-weight and compact - uses significantly less material vs PVC
- Highly durable, puncture resistant – 30 years guarantee
- Knott- and twist-free for ease of handling
- Withstands extreme temperatures
- No phthalates or PVC



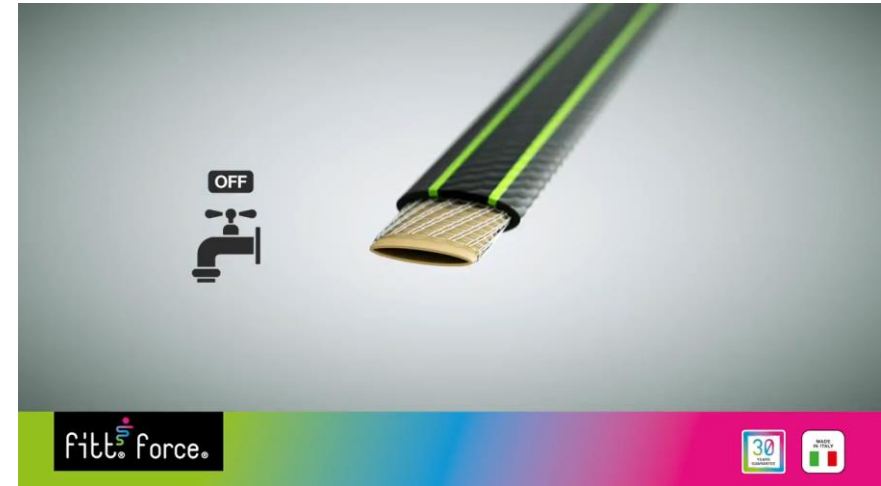
## NTS and HD-TECH: the perfect combination of technology and performance

- ▶ Thanks to the unique and original NTS mesh, FITT Force® is a hose that offers great malleability, prevents the formation of knots and twists, ensuring a constant flow of water.
- ▶ HD-TECH technology guarantees high resistance to abrasion and puncture.
- ▶ The use of Santoprene® thermoplastic vulcanizate (TPV), combined with ultra-light technology, gives the hose extreme handling and high flexibility.



## Product is guaranteed for 30 years

- ▶ Reinforcement layer composed of high tenacity fibers to withstand pressures up to 20 bar
- ▶ Cover with high tenacity technology (HDT) resistant to abrasion and puncture  
Ultra soft underlay for extreme handling and high flexibility even at low temperatures (-30°C)
- ▶ Absence of PVC, phthalates and lead  
The unique NTS mesh technology eliminates flow restrictions due to knots or twists
- ▶ Perfect all year round: -30° + 70°C.



## Materials

- ▶ FITT reports a 43% reduced CO2 emissions in the life-cycle assessment of one meter of hose compared to a meter of the standard PVC hose
- ▶ Safe for us and the environment – FITT Force® is free of PVC, lead, phthalates and other harmful chemicals
- ▶ Santoprene® TPV is a high-performance elastomer used in the automotive, consumer and industrial sectors, which combines the characteristics of vulcanized rubber (cold flexibility, high mechanical properties ...)

## Accessories – Ergonomic nozzle and Expressly Designed Fittings

- ▶ FITT NOZZLE is versatile for all irrigation and cleaning activities in working environments.
- ▶ Thanks to its ergonomics it is extremely precise in professional use.
- ▶ Fittings with anti-kink collars to prevent water restriction due to hose fold
- ▶ Born in collaboration with the MOMODESIGN Style Center