



SUSTAINABLE  
WATER SOLUTIONS

**Amiblu**<sup>®</sup>  
Sustainable Water Solutions

## Large Diameter Sewer Relining with HOBAS NC Line in Southern France

In the surroundings of Toulon on the Mediterranean coast of France, a 6400-m long sewer channel is being rehabilitated. The challenging relining installation include works in more than 100 m depth. While the installation of tailor-made non-circular HOBAS GRP half profiles by Amiblu is completed, the last phase of the project has started and should end beginning of 2018. In September 2017, it earned the construction company SADE the prestigious ISTT Rehabilitation Project Award.

La Seyne-sur-Mer, St-Mandrier-sur-Mer, Toulon, Le Revest-les-Eaux, Évenos, Six-Fours-les-Plages and Ollioules: The 288,000 people living in these seven communes in Southern France are all connected to the 6.4 km long sewer channel leading from Chateaubanne to the Cap Sicié's Amphitria Sewer Treatment Plant in La Seyne sur Mer. The resulting 22 million m<sup>3</sup> waste water per year of course require a perfectly functioning discharge system. Built around the time of World War II in the middle of the 20<sup>th</sup> century, the

structure of the old sewer had deteriorated considerably over the years, despite many renovations by means of shotcrete seal applications in the 80's. In 2014, the complete renovation of the aged channel has therefore started to give it a second life!

### THE COMPLETE RENOVATION OF THE AGED CHANNEL HAS STARTED TO GIVE IT A SECOND LIFE

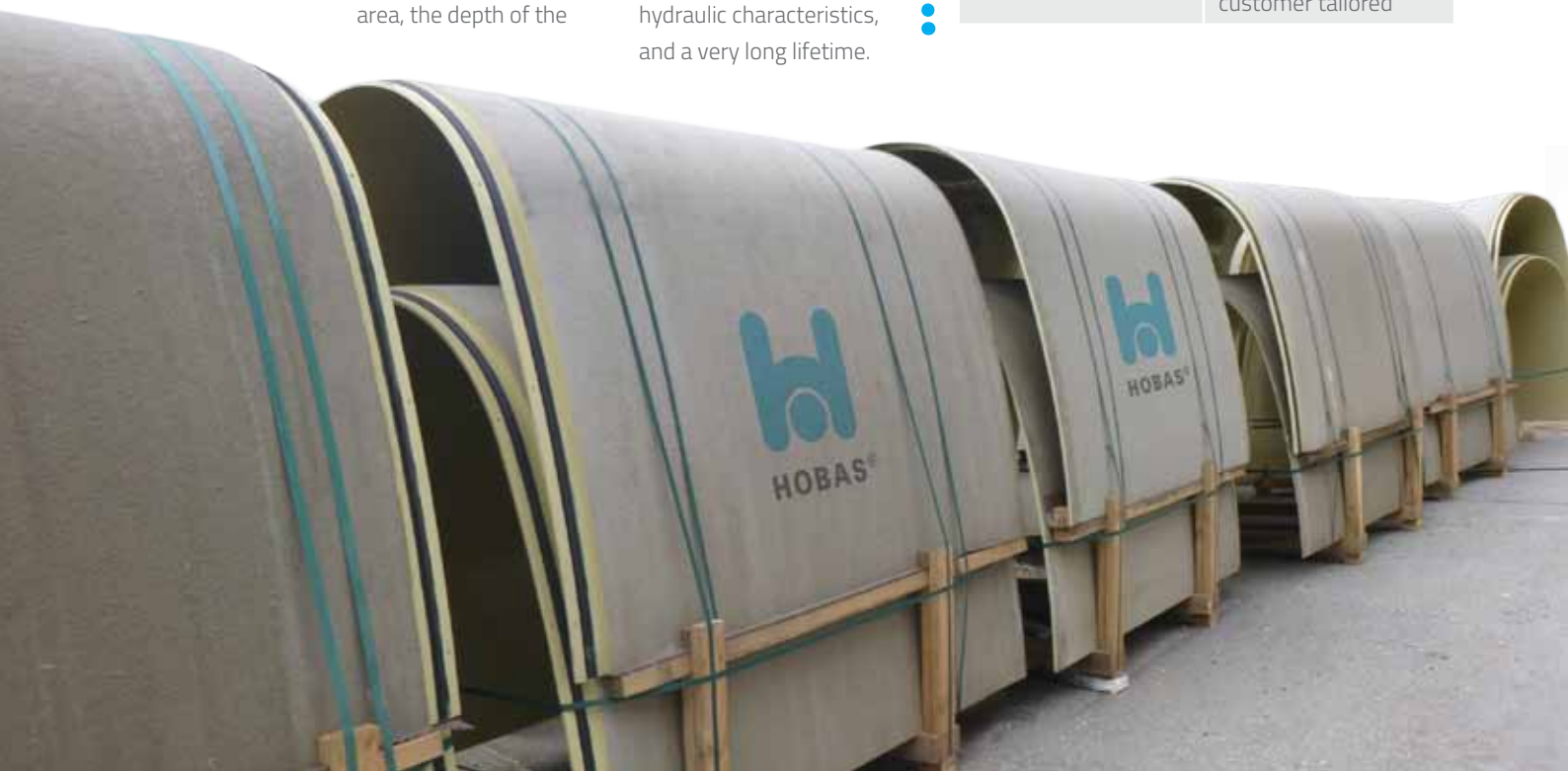
The project is very challenging: The space conditions on site are very limited and require flexibility regarding deliveries as it is an urban area, the depth of the

channel in some places more than 100 m, and the demands of building an efficient, corrosion-resistant system that will reliably last for at least half a century very ambitious. GRP experts from Amiblu came up with a solution that took everything into account:

Easy to handle, lightweight non-circular pipes (HOBAS NC Line) with a high chemical resistance against hydrogen sulfide, excellent mechanical and hydraulic characteristics, and a very long lifetime.

#### PROJECT PARAMETERS

Year of construction	2017-2018
Installation time	ongoing
Length of pipeline	6400 m
Application	Sewer, NC Line
Installation	Relining
DN	1500 x 1678 mm
PN	1 bar
Client	SADE
Consultant	SADE
Contractor	SADE
Features/benefits	Easy handling, light in weight, high chemical resistance, excellent hydraulic characteristics, long service life, customer tailored





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The NC pipes could be perfectly tailored to the customer's requirements and the technical specificities of the network.

Following several preparatory works, the French construction specialist SADE started with the installation of the half-pipes on the channel's vault in November 2015. It can be accessed from four pits, from 40 to 105 meters deep, one of which is the Gabrielle's pit from where the half pipes are transported to be installed. Due to the

## SADE WAS PRESENTED WITH THE PRESTIGIOUS REHABILITATION PROJECT AWARD

narrow space on the storage area located in the city, the GRP half-shells 1500 x 1678 mm with 2.35 m length each were delivered successively and strictly on time at defined hours – around 128 NC pipes, equaling 300 m

pipe were supplied per week. The NC elements were inserted into the old sewer channel with the help of lifting rings and a transport cart and then connected to each other with pre-mounted EPDM joints to assure a leak-tight system.

A total of 2724 GRP half-shells were used to repair the 6400 m long old sewer channel. SADE employed special safety measures for the workers involved in the construction works. Once all works will be completed in January 2018, the people in the surroundings of Toulon can rely on a perfectly efficient sewer system for at least the next half century.

On September 26<sup>th</sup>, at the International Society for Trenchless Technology conference in Medellin/Colombia, SADE was presented with the prestigious Rehabilitation Project Award for their work.



Amiblu is a 50:50 joint venture whose goal is to develop and deliver fully sustainable water solutions. Amiblu combines Amiantit Europe and its Flowtite Technology, and Hobas Europe, part of WIG Wietersdorfer Holding, and is the specialist in drinking water, irrigation, waste water, hydropower and industry.