

BorSafe HE3490-LS-H pipe brings water to Tianjin EcoCity in China

The background

Development of the Sino-Singapore Eco-City

In November 2007 a formal agreement was signed by Wen Jiabao, Prime Minister of P.R.C. and Lee Hsien Loong the Prime Minister of Singapore to jointly develop a resource efficient, environmentally friendly and socially harmonious city in China. The site chosen for the Sino-Singapore Tianjin Eco-city was the Tianjin Binhai New Area, which is 45 km from Tianjin and 150 km from Beijing. The total area is over 30 km² and the city is planned to have 350,000 residents by 2020.



The construction of the eco-city started in September 2008 and by June of 2009 6 billion RMB (approximately \$880 million) had already been spent on this prestigious development.

The challenge

Providing sufficient water for the city

One major challenge for the developers was that the existing water supply did not match the current demand, let alone the future requirements of the city. Therefore, there was an urgent need to bring additional water to the area, and in September 2009 a project was launched to address this demand, called the "Emergency Water Supply Pipeline Engineering-Yuelong Sub-water Supply Pipeline in Tianjin Eco-City".

A budget of 50 million RMB (approximately \$7.3 million) was provided to develop the pipeline to bring the additional water to the site. The total pipeline length was 4.5 km, starting at a point 80 m to the west of Jingshan railway and then following the left

bank of the Yongding New River, passing under the Ji Canal, and then to the pumping station which will provide the water to the eco-city.

The Tianjin TEDA water company was keen to use polyethylene for the complete pipeline due to the increased speed of installation and the material's inherent resistance to corrosion. However they were concerned about the damage that could be caused in the directional drilling operation under the Ji Canal. To allay their concerns pipe manufacturer Cangzhou Mingzhu Plastics, supported by Borouge were able to offer pipe manufactured from the new high stress crack resistant material BorSafe HE3490-LS-H for this section, which would provide the highest resistance to any surface damage that was induced during the directional drilling operation.

The solution

High stress crack resistant material addresses concerns over surface damage

The Tianjin TEDA water company accepted the proposed solution and an 800mm diameter SDR17 pipe was manufactured from BorSafe HE3490-LS-H black PE100 compound for the directional drilling section. The remaining pipeline was manufactured from standard BorSafe HE3490-LS PE100 black

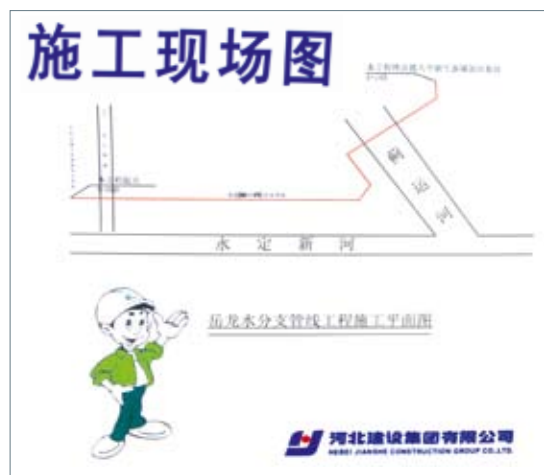
compound. All the pipes were manufactured by the well known local pipe producer Cangzhou Mingzhu Plastic Co. Ltd. who are part of the Hebei Cangzhou Dongsu Group.

The project was successfully completed on schedule and on October 13th the valves were opened to provide the massive construction site with the much needed additional water.

The benefits

BorSafe HE3490-LS-H provides "Peace of Mind".

Clearly the use of high stress crack resistant BorSafe HE3490-LS-H had enabled fast and efficient installation technology to be used in an environmentally sensitive area and provided the water engineers with "Peace of Mind". On completion of the project the Tianjin TEDA water company stated, "We much appreciated the support provided by Cangzhou Mingzhu and Borouge to help us meet our challenging targets. The provision of 800 mm diameter pipe produced from high stress crack resistant BorSafe HE3490-LS-H PE100 material for the directional drilling section met all our requirements with regard to installation and addressed our concerns about abrasion damage."



The layout of the water supply pipeline

Summary table

Customer name	Cangzhou Mingzhu Plastic Co. Ltd.
Application/Product	Water supply by directional drilling under canal in environmentally sensitive area
Grade(s) used	PE100 BorSafe HE3490-LS-H
Functional Requirements	To provide a supplementary water supply to eco-city: <ul style="list-style-type: none"> • Secure supply in environmentally sensitive area • Rapidly installed to initially supply construction site • Installed under canal by directional drilling – cracks must not develop from resulting surface damage
Benefits	For the water company material will provide following benefits: <ul style="list-style-type: none"> • Enabled pipe to be rapidly installed to supply the construction site • Enabled directional drilling to be used to install pipe under the canal with high security • Provides a long trouble free life for this environmentally sensitive area

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