

## Case Study Abu Qir Fertilizer Plant

Application:	Fertilizer Plant
Location:	Egypt
Year:	2017
Instrumentation involved:	Hard Rubber Lined Pipes
Provided Solution:	On Field Analysis, Planning & Intervention

### Project:

The Abu Qir Fertilizer Complex consists of:

- No. 1 Ammonia Plant 1000 & No. 1 Urea Plant 1550 mtpd & No. 1 Urea Drilling Plant
- No. 1 Ammonia Plant 1000 mtpd, No. 1 Nitric Acid Plant 1800 mtpd & No. 1 Ammonium Nitrate Granulation Plant 2400 mtpd
- No. 1 Ammonia Plant 1200 mtpd, No. 1 Urea Plant 1750 mtpd & No. 1 Granulation Plant 2000 mtpd.



Figure 1.1 Abu Qir Fertilizer Plant - Egypt

## Description:

The client asked for valveIT support concerning problems occurred on hard rubber lined pipes used for abrasive fluid. In details, damages referred to:

- a) Adhesion of hard rubber on pipes



Figure 1.2 Adhesion Problems with Abu Qir's Hard Rubber Pipes

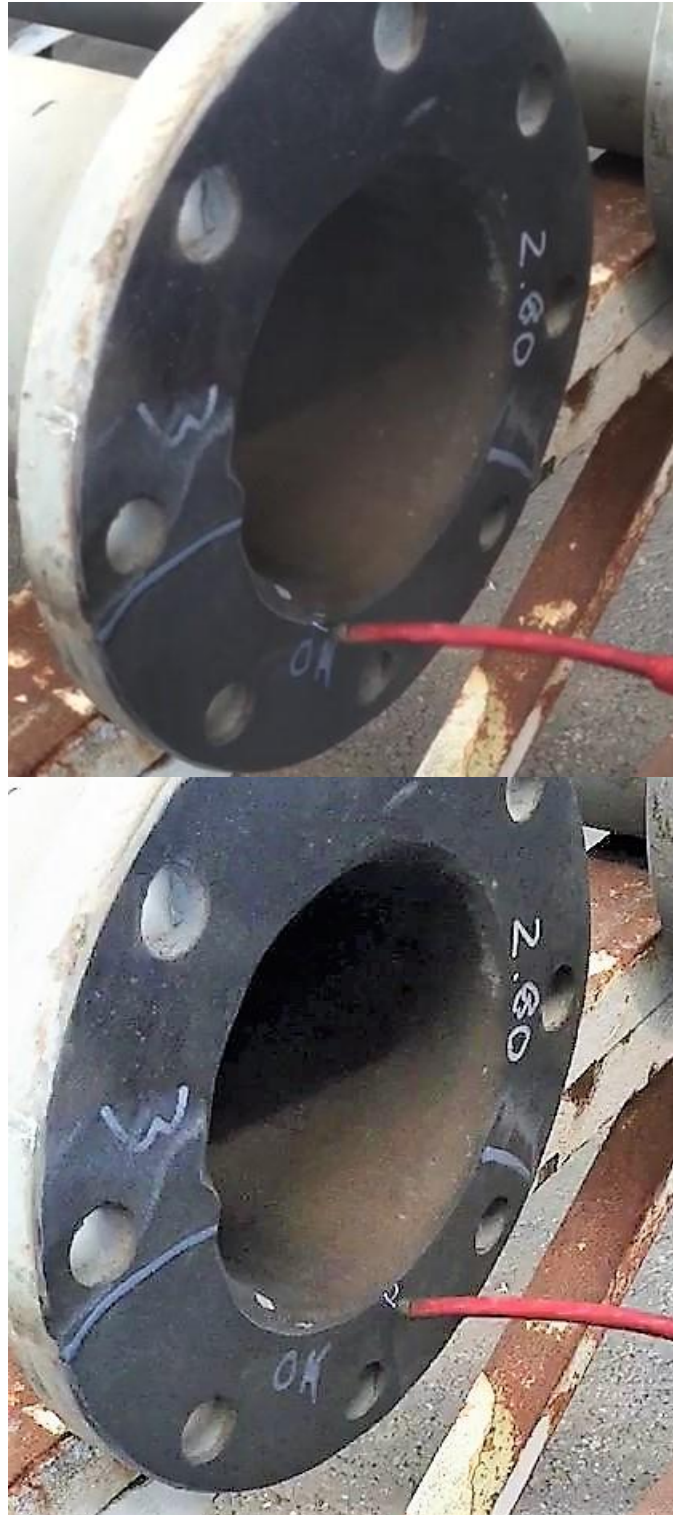
b) Arising of bubbles between lining and pipe body



*Figure 1.3 Non-performing Bubbles arising between Body and Lining of the Abu Qir Fertilizer Plant*



## c) Conductivity of the rubber surface & Failure of the Spark Test



*Figure 1.4 Spark Test Failure for Abu Qir's pipes due to the Conductivity on their rubber parts*

## valveIT Intervention:

- a) Removing of previous lined material with pyrolysis process & Removing of previous rubber by pipe heating & air flushing. Subsequent Internal & External Sandblasting of the pipes



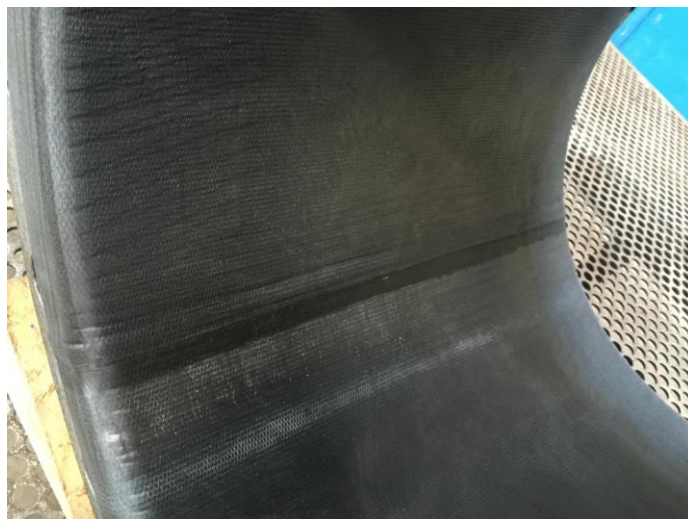
Figure 1.5 Damaged Pipes are cleaned and restored through Heating, Air Flushing and Sandblasting processes

- b) Application of special chemicals glue for adhesion purpose



Figure 1.6 New Adhesion on the pipe surface is obtained thanks to the application of a special glue on it

## c) Application of adhesion new rubber



*Figure 1.7 New rubber coverage is applied on the pipe*

## d) Autoclaving for Vulcanization process



*Figure 1.7 Rubber is finally fixed through the Vulcanization method*