



鸿通管材

Hongtong Piping Materials

General Introduction of Weihai Hongtong Piping Material Co.,Ltd. China.

TYPICAL CONTENTS

- Part 1 : General Introduction
- Part 2 : Technical Presentation
Subsurface Flexible Production Tubing
- Part 3: Technical Presentation
Surface lined-GRP and reelable RTP lines**
- Discussion and Look forward**

Weihai Hongtong Piping Materials Co., Ltd. was founded in 2001 with 60 million yuan registered capital. Specializing on engineering and production of surface and subsurface non-metallic line pipes series. Lead member of State High-technology Development Plan 863-Program on “Ocean deep water non-metallic material composite pipe development”.

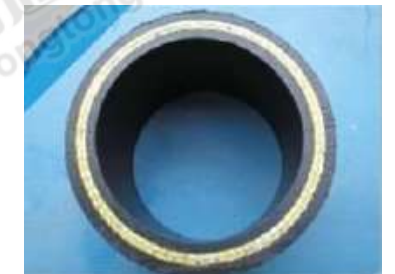
Listed in China National Equity Exchange and Quotations (NEEQ) stock market since 2015.

Average manpower strength 200 staff. Current major clients are CNPC and Sinopec.



Address: 87 Guangzhou Road, Wendeng District, Weihai, Shandong, China

| Item of Comparison | <u>Non-Metallic</u> Typical for RTP | <u>Metallic</u> Typical for Bare Steel Pipe |
|----------------------------------|--|---|
| Material Of Construction | HDPE, PEX, PA, PVDF, PET, Glass Fiber, Galvanized Steel Wire | Carbon Steel, SS, Duplex SS, CRA Class, <u>PE Linings</u> etc. |
| Pressure Capacity | Low & High Pressure #150, #300,#600 & #900 (special design for P&T) | Low & High Pressure #150, #300,#600,#900, #1500 etc |
| Process Temperature | Our assessment, Cost effectiveness to bellow 8" & 65C | Special and costly materials & alloys above 70C and High cost of Replacements/maintenance. |
| Biocide and Inhibition Treatment | Not Required | Special Treatment or Design in Mandatory |
| Process Asset Integrity Program | Not Applicable. (special attention on above ground and UV protection) | Internal and External Pitting Corrosion Scales accumulations CP design for underground and sand dunes |
| Operational Life | 15-30 years | 1-5 years |



Advantages of RTP, Production and Water Injection Systems

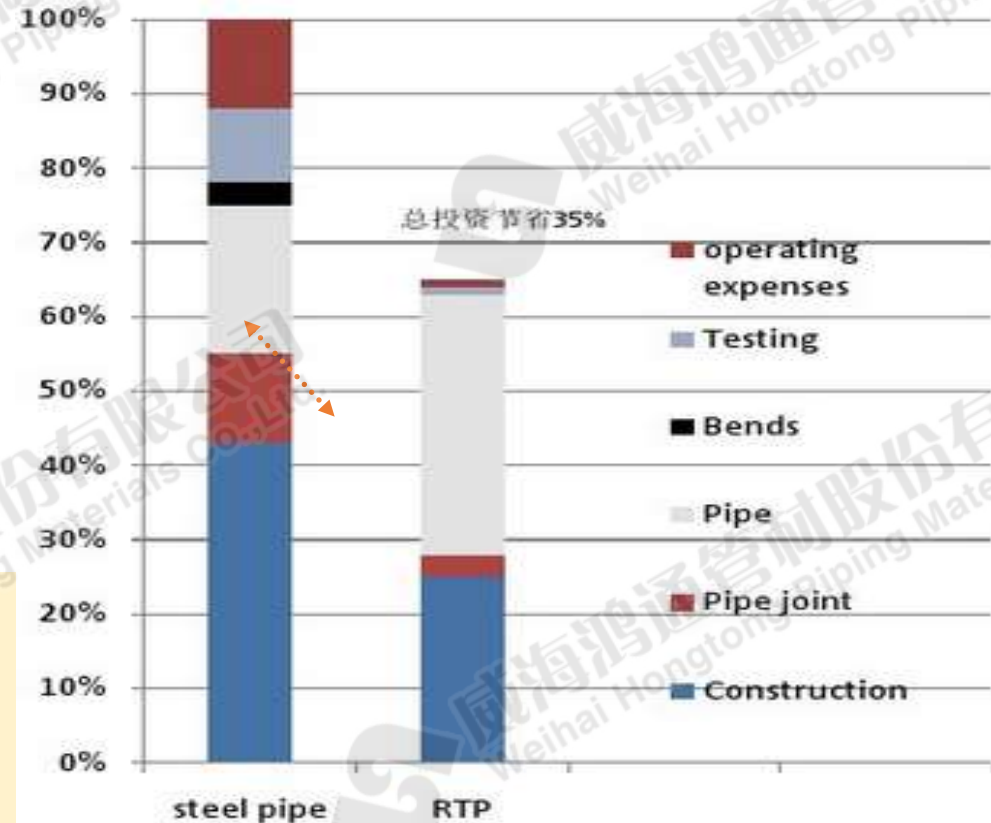
Economy Advantages and Considerations :

- **Minimize production deferrals** for first oil. Quick Fix and short installation-time shortened 30-60% ,
- **Smaller Total Manpower Strength & Cost Reduction 30-70%** (personnel, materials and QC etc)
- Saving on Chemical supply, Environmental preservations and loss of containments, Cost of Coating, fewer joints..
- Increase on Initial Capex easily regained from saving on Operational, Capacity and Total Cost of Ownership,
- **Maximize ICV content cross the project supply chain & life cycle** from design and abandonment, Basic Skills, Standardized Easy-Fix Connection System.

Technical Advantages and Considerations :

- **Improve Site Personnel Safety and Environment**
- **Additional Fluid Design Handling Capacity, Ultra-low Friction coefficient, less pressure Drop in Long Distance**
- Less to No Leak points, Less Joints/connections per length
- Inherently No Corrosion inhibitions or electrical CP needed,
- No Pigging and Chemical Injections for piping.

Typical Total Life Cost Assessment



Single cost of Replacement or significant Environmental spill may offset "perceived saving" on Steel pipes initial capex vs RTP.

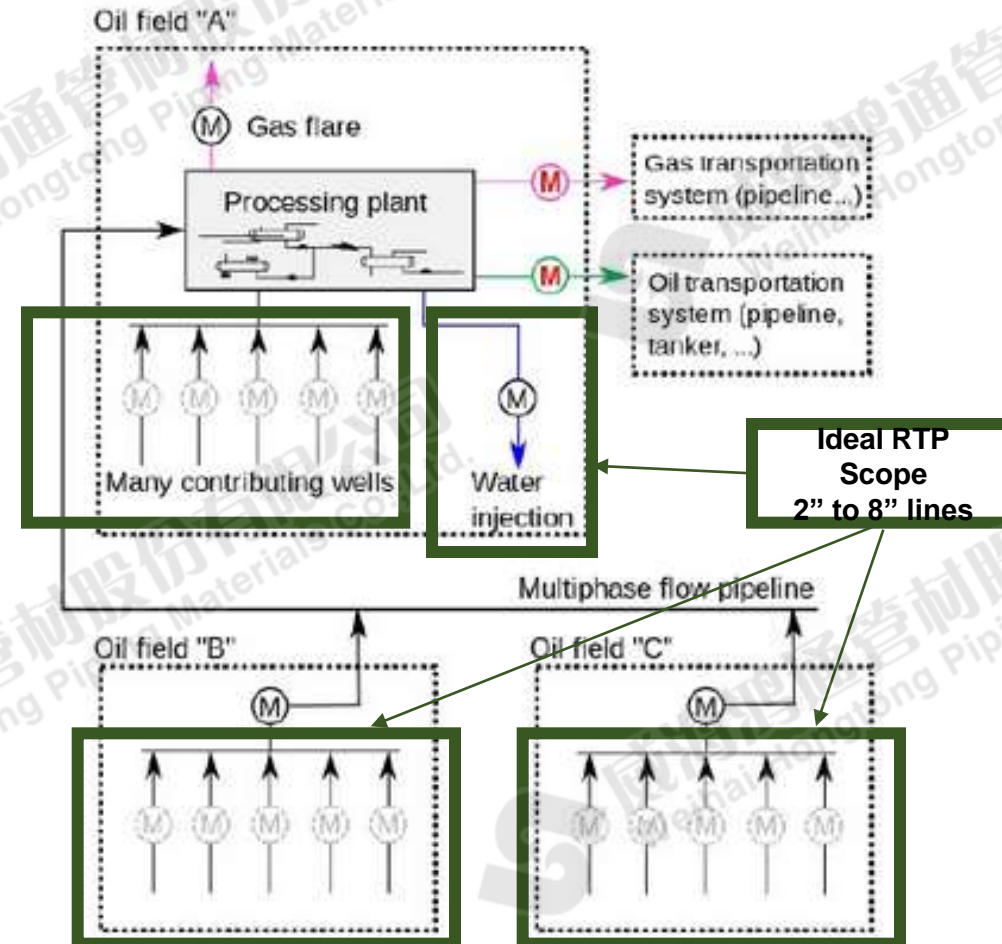
Typical Application of RTP

Oil-Gas industrial :

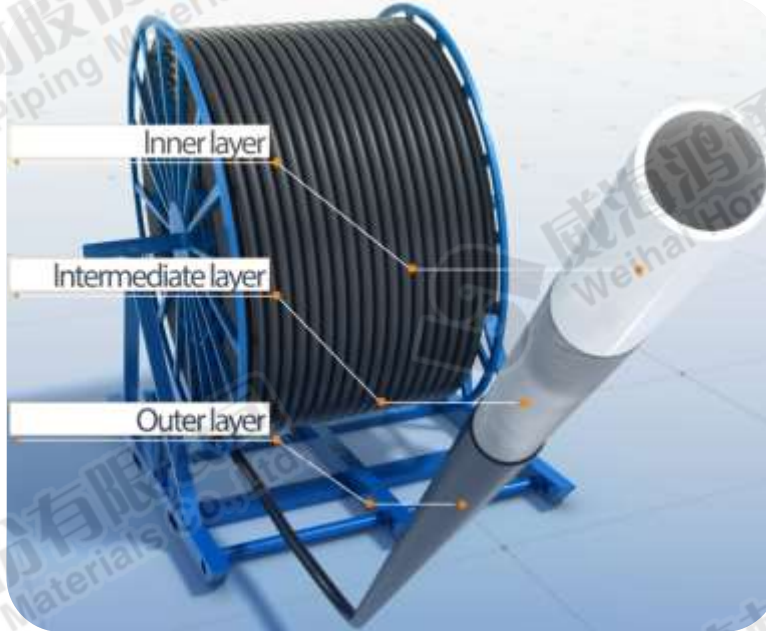
- Wells gathering to Manifolds,
- Chemical Injection headers,
- Production Water Injection,
- Production & Waste Water Disposal,
- Oil and Water Transmission (upto 8" is most economical for RTP).

Utility Services:

- Fire water ring system,
- Water Sources wells,



Target Production Series of RTP



PRODUCT STRUCTURE:

Inner Layer: Extruded with HDPE;

Intermediate Layer: Enhanced Layer which is Composed of Polyester Fiber, (consideration for Steel Wire; in future)

Outer Layer: Extruded with Modified Polymer (and UV protection)

Expected weigh for 4" and 6" pipes 7 & 10 kg/linear M

NORMAL DESIGN TEMPERTRUE: -40 °C to 65 °C

NORMAL DESIGN PRESSURE: Upto 11 MPa

ULTRA SPECIAL DESIGN TEMPARATURE Upto 90C.

APPLICABLE INTERNATIONAL QA/QC STANDARD:

API Q1,

15S,

Our standard design consideration for On-Shore Oil and Gas Industry and Utility Services in Oman, GCC and MENA.
 Supply or Long-Term-Rental agreements.

Typical Connection System



Production Line of SubSurface Cable-Containing Spoolable Composite Pipes



Production Process of Surface RTP

Molding Mechanical Structure Layer



RTP Production
Line Video

Weihai Factory, Shandong, China

- New testing facility capable of delivering 80 Mpa testing and Fluid media temperature up to 90 °C.



Computer Unit



Water Bath Heater and long-Hours
Performance Testing Unit (upto 40MPa)

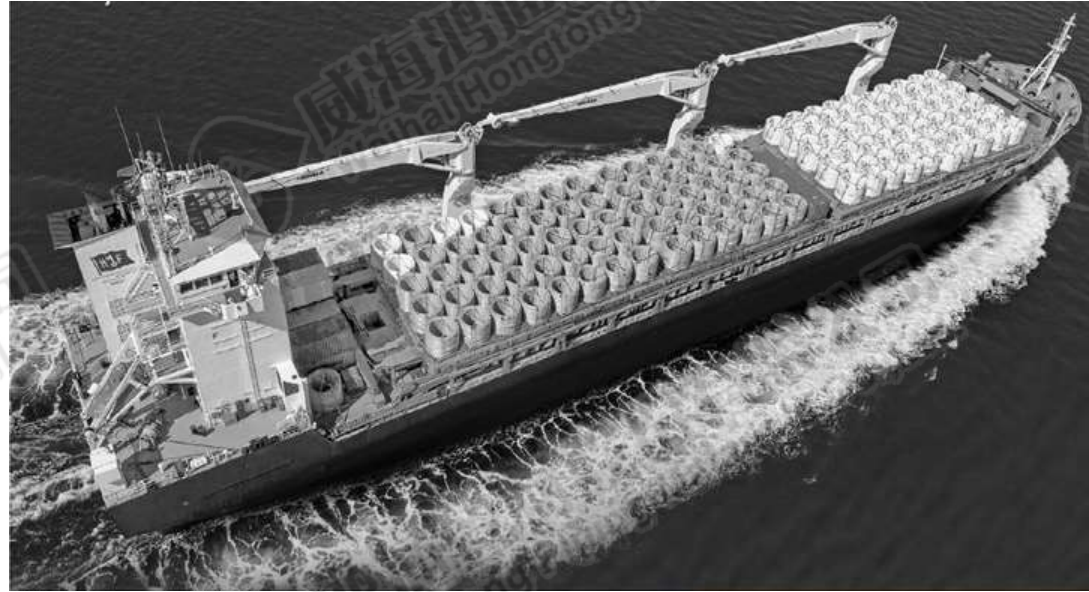


High Pressure Performance Testing
Unit (upto 90MPa)

RTP Transportation – Hongtong China



Oceans Transportation of RTP



Mid Size Shipment Approx 50-100km per flat-layer

Typical full sized large cargo ships can deliver upto 2,000 km.

RTP Transportation – Site Installations



Recommended transportation for quick installation for long lines and minimize installation time.

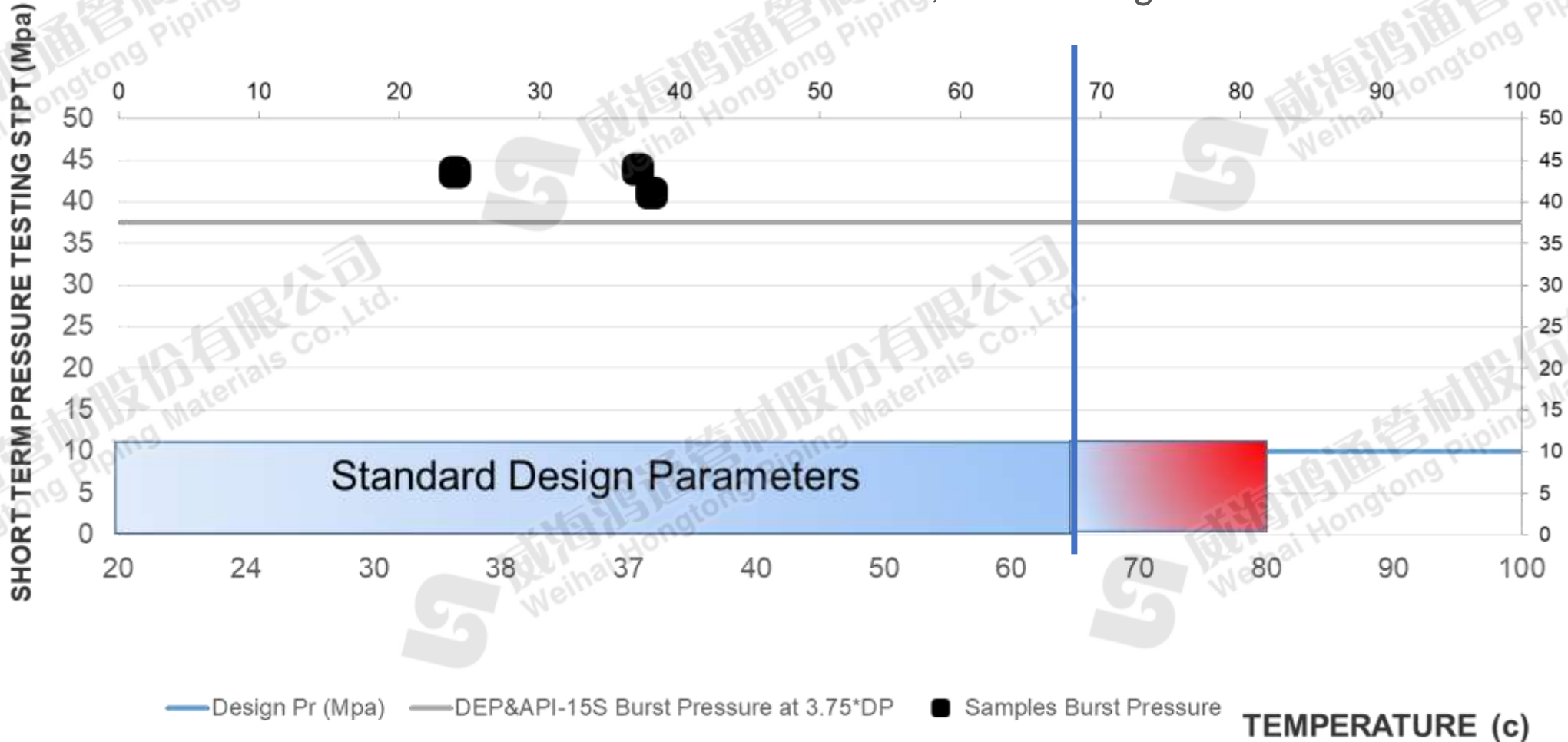
Transportable by road to suite local traffic specification and restriction requirements.

End Connectors



Oman Standard Design Condition

Target Design Envelop (4" #600, 65C. HDPEEx liner ,
Fibre RTP, Colour Bright to White



Burst Pressure Capture Video

Burst Pressure Test -1

Oman Client
7/Dec/2018

Burst Pressure @ 43.9Mpa



Burst Pressure Test -2

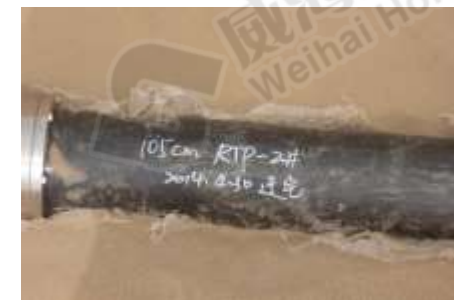
Oman Client
10/Dec/2018

Burst Pressure @ 43.5Mpa



4", 10Mps, (PERT, Internal and External)

Typical Construction of RTP



Series of 1 meter spools were installed for continue testing/analysis

Typical Construction of RTP



Installation
Demo Clip
50 Sec

Policy Statement for Quality Controls, Supply Chain and Work Ethics:

- Quality First.
- Supplier verification of critical raw materials from local market or overseas must be **subjected to internal testing and evaluations** to meet company engineering parameters.
- Research and Development will continue to be Hongtong's leading strength over global suppliers of Industrial flexible tubing on oil and gas sector.

Our Commitment

- Deliver products and services that meets standards and clients specifics requirements for Subsurface, Surface and Marine application of non-metallic reinforced line pipes.
- Undertake clients technical enquiries and operational challenges to be solved until technical proven otherwise.

Thank You.

All are welcome to visit our team and production facilities.



<http://www.hongtongpipe.com/>

Q & A