Development of Embossed Plastic and Concrete Coated Pipe for Offshore Pipelines*

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Table 3 Mechanical Resistance Stress

embossing is conducted by advancing this carriage

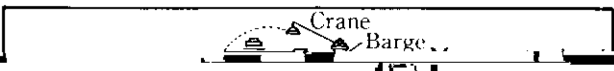
portions to cope with the out of roundness.

The coating process is described in the following

4 Mechanical Characteristics for Practical Use

Figure 6 shows a representative pipeline laying method using a laying barge[2]. Pipes 12 m in length are continuously welded on board and are delivered into the

investigated by supposing this laying method and the damage at the sea bottom.



ing the peeling-off of concrete.

4.3 Flexure Characteristics

The bend radius (R) during pipe-laying was determined and the simple-bending test was conducted. The minimum bend radius for design is given by the follow-

$$R = \frac{E \cdot D}{2\sigma_0 \cdot D_F} \quad \cdots\cdots(3)$$

where, R: Overbend radius of curvature (ft)

E: Elastic modulus (= 30 × 10^6 psi) pipe is 21 tf, while that of the embossed polyethylene-coated pipe is 26 tf. It can be seen from this that embossed surface of the coating contribute to the bending yield strength. In the general coated pipe, cracks were formed in a wide area and the gap of the cracks was

wide. In the embossed polyethylene-coated pipe, hair

external forces, such as those generated by anchoring from ships and collisions of otter boards of fishing trawls, in addition to external forces from the natural environment, such as tidal currents, movement of sea-bottom soil and ground pressures by earthquakes. To investigate

the resistance to these external forces, a drop test was