

**KAWASAKI STEEL TECHNICAL REPORT**

No.41 ( October 1999 )

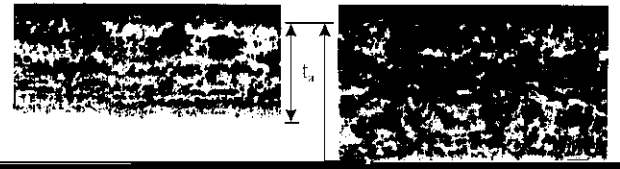
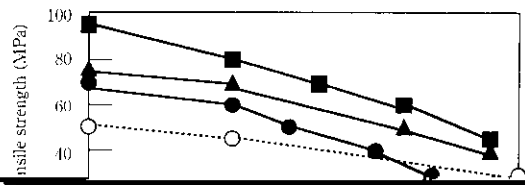
*Advances in Iron and Steel Technologies,  
Commemorating the 30th Anniversary of  
Technical Research Laboratories*

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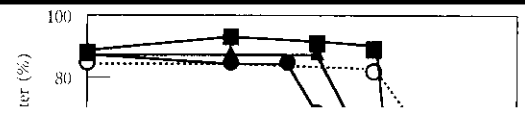
**Recent Activities in Research of Tubular Products**

# Recent Activities in Research of Tubular Products\*

*Synopsis:*

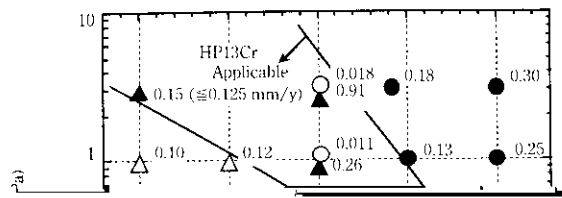


7  
20



(a) Total thickness of all oxide layers ( $t_o$ )





process.

In order to meet the requirements for improved quality of welded portion and upgraded products, laser welding with a high energy density heat source is being practically used in place of conventional high frequency welding. The environments where linepipes are used are

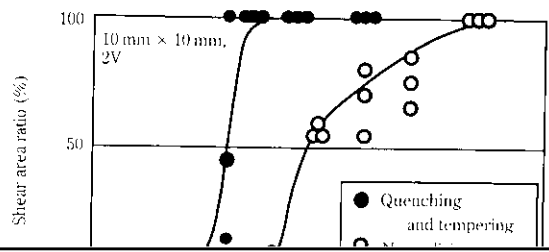
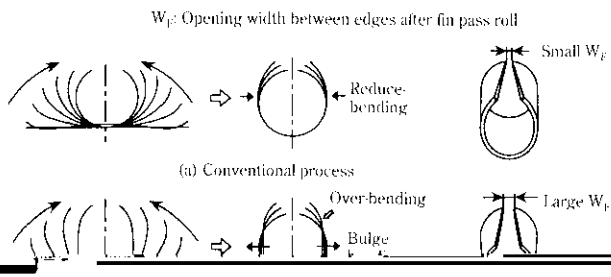


Fig. 3 Comparison of the forming flowers between conventional forming process and CBR forming process

Fig. 5 Charpy impact property of weld seam for offshore pipelines and cables used in the Arctic

