

# **CASE STUDY 132**

### [OIL LIKE POLYMER QUENCHANTS FOR FORGED ALLOY STEEL QUENCHING]



### **CUSTOMER DETAILS:**

A specialty steel producer in western India for forged alloy steel bars.



## **OBJECTIVE FOR TRIAL:**

Selecting Polymer quenchant Hiquench P600 for alloy steel bars.



# **OPERATING/ APPLICATION DETAILS:**

Part - Steel Bar with various diameters
Material Grade - 13CrL80/X22Cr/SS420 and 9Cr1Mo
Hardening Temp. - 980 °C/ 180 Minutes/ 700 Preheat

Spec Tensile Strength - 650-850 MPa

Quenchant Temp. - 35 °C/30 Min for 175 mm

Agitation - Pump type 4 nos. Impact Strength - 27 Joules at – 46 °C

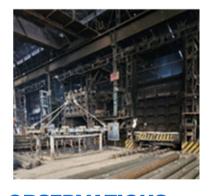
Quenchant Tank Capacity - 120000 litres

## PRODUCT RECOMMENDED: HIQUENCH P600 WITH 5% CONCENTRATION



## **COMPONENT VIEW:**

**Furnace** 



Sample



**OBSERVATIONS:** Tensile Strength and Impact Strength observed within the limit

#### Specification

As Quench Hardness 400-550(BHN): 460-502 As Tempered Hardness 250 BHN Max: 216-226 Tensile Strength 650-850 MPa: 830 Mpa Impact Strength 27 Joules at – 46 °C: 37 Joules

## **TRIAL RESULTS**



Result found ok in Hiquench P600 for alloy bar at a concentration of 5%.