

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%.