CASE STUDY 129

[SELECTION OF SUITABLE POLYMER QUENCHANTS FOR ALLOY STEEL BARS]

CUSTOMER DETAILS:

Leading Steel mill for alloy steel bars and pipes

OBJECTIVE FOR TRIAL:

Selecting suitable Polymer quenchant for alloy steel bars achieving required tensile and impact strength.

OPERATING/ APPLICATION DETAILS:

Description		Specification
Part	:	Steel Bar Dia 60, 83 and 175 mm
Material Grade	:	SS410/SS420 /13Cr and 9Cr1Mo
Hardening Temp.	:	980 °C/ 240 Minutes/ 650 Preheat
Spec Tensile Strength	:	650-850 MPa
Quenchant Temp.	:	35 °C/ 30 Min for 175 mm
Agitation	:	Pump type 1 nos.
Impact Strength	:	27 Joules at – 46 °C
Quenchant Tank Capacity	:	20000 litres

PRODUCT RECOMMENDED: HIQUENCH P50 WITH 14% CONCENTRATION.

COMPONENT VIEW:

OBSERVATIONS: Tensile Strength and Impact Strength observed within limit

Specification		Result
Tensile Strength 650-850 MPa	:	800 Mpa
Impact Strength 27 Joules at – 46 °C	:	32 Joules

TRIAL RESULTS

Result found ok in Hiquench P50 for alloy bar at concentration of 14% without any crack.