

| | | | |
|----------|----------------------|-------------------|------------------------|
| 11/10/17 | SECTION: 110 | HAEI NO: 7460 | INVOICE NO: 7460 |
| 11/10/17 | STEEL SUPPLIER: APTI | REC. QTY: 7460 | INVOICE DATE: 11/10/17 |
| 11/10/17 | STEEL TC NO: 110 | NO. OF BARS: 7460 | |

Process/Mfg Route

| NO | BS | BSI | BS | BS | BS | BS | BS | BS | BS | BS | BS | BS | BS | BS | BS | BS | BS |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 |
| 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 |
| 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 |

Bar Size (As per WI) Qty: 10% Of Total Heat

| NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |

Gas Content (PPM) As per Mill Tc

| Min | Max | Value | Mill Tc |
|-------|-------|-------|---------|
| 0.001 | 0.001 | 0.001 | 0.001 |

Steel Supply Condition:

As Rolled

- MACRO (i) Internal soundness Sample: (ASTM E 381 or as per customer) 5% R 2 C 7
- (ii) Dendrite structure 01 sample: Value Obs. 0.1
- (iii) Step Down Test Sample: (IS 4075 or as per customer)

Micro structure As Rolled:

Micro structure: (or as per customer)

Mill Tc

SSB

ULTRASONIC TEST (AS PER ASTM A388):

Mill Tc 100% OK

INCLUSION RATING (IS 14163 / ASTM E454 OR REQUIRED BY CUSTOMER)

| | A | | B | | C | | D | | DS | |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
| | IN | TK | IN | TK | IN | TK | IN | TK | IN | TK |
| Cost Spec If Any | 1.0 | 1.5 | 1.0 | 1.0 | 0.5 | 0.5 | 1.0 | 1.0 | | |
| Mill Tc | 1.0 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | | |
| SSB | 1.0 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | | |

GRAIN SIZE:

Spec.

Mill Tc

4.0

SSB

(ASTM E 112 / IS 4748)

JOMINY HARDENILITY

IS 3848 / ASTM A255

(As per required by Customer)

| Distance | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Specified | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| Mill Tc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| Observed | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |

MECHANICAL PROPERTIES: (If Required in TDC / Customer)

As per IS: 1608 / ASTM A 370

As per IS: 1757

| | UTS | YS | N/mm ² | %EL | IMPACT VALUE | IMPACT VALUE |
|-----------|-------------------------|-------------------------|-------------------|-----|--------------|--------------|
| | N/mm ² / MPA | N/mm ² / MPA | | | CHERRY | IZOD |
| Specified | 520-550 | 355 | 355 | 22 | 30 J | |
| Observed | 520 | 355 | 355 | 22 | 30 J | |

As Rolled Hardness

(BHN (Max / Min))

(If Required in TDC / Customer)

| 1 | 2 | 3 | 4 | 5 |
|-----|-----|-----|-----|-----|
| 197 | 195 | 201 | 203 | 205 |

VISUAL:

- (i) Surface Condition 100 % Bars Checked
- (ii) Heat No. 100 % Bars Checked
- (iii) Color Code. 100 % Bars Checked

OK no (Pust, Crack, Gas (H/Hing))

OK (7460)

OK (Yellow + Green Spot)

REDUCTION RATIO:

Specify

BLOOM SIZE: 240 X 240 REDUCTION RATIO: 5.1:1

(If Required in TDC / Customer) As Per Mill Tc

DECARB LEVEL:

(AS PER IS 6396 / ASTM E1077)

Specified

Observed

PD

0.22

FD

(If Required in TDC / Customer)

UPSETIBILITY TEST (AS PER IS 10167):

Test Certificate verified for Each Heat no:

Available & OK

Not Available

Not Conforming

TDC / Customer STD

(If Required in TDC / Customer)

SSB/TDC/

Mill Tc No

Mill Tc Date

Verified By:

MIX-UP TEST

(If Required in TDC / Customer)

Verified By Mobile Spectro / X-Ray Gun/Spark Test

Accepted

Rejected

Other Remarks

Approved By

Checked By