Base on engineering stress-strain curve:

Material properties obtained from conducted tension (longitudinal) coupon tests

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample Set | Sample # | Dimensions of Reduced Section | | | Yield Load by 0.2% Offset (N) | Yield Strength by 0.2% Offset (Mpa) | Yield Load at 0.5% Strain  (N) | Yield Strength at 0.5% Strain (Mpa) | Ultimate Tensile Load  (N) | Ultimate Tensile Strength  (Mpa) | Elongation at Fracture (50mm G.L.)  (%) | Modulus of Elasticity  (Mpa) | Character of  Failure | Location of Failure |
| Width  (mm) | Thickness  (mm) | Area  (mm2) |
| Old HAZ | 1 | 19.075 | 6.452 | 123.1 | 52231 | 424.4 | 53285 | 433.0 | 63187 | 513.5 | 24.0 | 215070.7 | Ductile | Base |
| 2 | 18.898 | 6.528 | 123.4 | 53054 | 430.1 | 53698 | 435.3 | 63049 | 511.1 | 23.9 | 190036.6 | Ductile | Base |
| 3 | 18.974 | 6.528 | 123.9 | 53436 | 431.4 | 53864 | 434.9 | 62288 | 502.9 | 25.1 | 209242.4 | Ductile | Base |
| **Average** |  |  | **123.4** | **52907** | **428.6** | **53616** | **434.4** | **62841** | **509.2** | **24.3** | **204783.2** | **Ductile** | **Base** |
| Base metal | 1 | 37.135 | 6.629 | 246.2 | 98773 | 401.3 | 101019 | 410.3 | 124003 | 504.0 | 39.1 | / | Ductile | Base |
| 2 | 37.440 | 6.604 | 247.3 | 102443 | 414.4 | 104355 | 422.1 | 124919 | 505.4 | 40.7 | / | Ductile | Base |
| 3 | 37.821 | 6.731 | 243.6 | 103243 | 405.4 | 105023 | 412.5 | 129795 | 509.5 | 35.9 | / | Ductile | Base |
| **Average** |  |  | **245.7** | **101486** | **407.0** | **103466** | **415.0** | **126239** | **506.3** | **38.6** |  | **Ductile** | **Base** |