This sample inventory includes two different geometries: *tubes* and *pipe sections*. The dimensions and quantities of each geometry are listed in Table 1. Each specimen has been submitted to one of the 8 heat treatments listed in Table 2 to achieve and simulate different microstructure conditions.

Table 1  
Specimen Dimensions and Quantity for Each Geometry

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Quantity | OD (in) | Wall Thickness (in) | Axial Length (in) | Angular Section |
| Tubes | 16 | 2 | 0.165 | 12 | 360° |
| Pipe Sections | 8 | 18 | 1.5 | 9 | ~60° |

Table 2  
Specimen Heat Treatments

|  |  |  |  |
| --- | --- | --- | --- |
| Condition | Heat Treatment | Target Hardness (HV 5.0) | Actual Median Hardness |
| As received | None | 215 | 220 |
| Normalized | 1050°C/0.5h/AC | 425 | 428 |
| Normalized + Tempered | 1050°C/0.5h/AC + 775°C/2h/AC | 215 | 208 |
| Tempered | 790°C/2h/AC | 195 | 207 |
| Over-Tempered | 790°C/10h/AC | 185 | 198 |
| Fully Ferritic | 950°C/0.5h + cool to 760°C/3h/AC | 160 | 147 |
| HAZ | 900°C/1m/AC | 300 | 405 |
| HAZ + Tempered | 900°C/1m/AC + 775°C/2h/AC | 215 | 170 |