# Market Survey for Material from Vacuum Vessel Project

## 1. Background

Fusion for Energy (F4E) currently holds spare material originating from the Vacuum Vessel Project.

## 2. Description of Available Material

The available material consists of 316L(N)-IG austenitic stainless steel in the following product forms:

- Forged round bars
- Forged blocks
- Rolled plates

The material grade 316L(N)-IG (ITER Grade) is a nitrogen-enhanced, low-carbon austenitic stainless steel specifically developed for nuclear and fusion applications which implies a controlled content of Cobalt to reduce its nuclear activation. It is characterized by:

- Controlled chemical composition with enhanced Nitrogen content and controlled Cobalt content
- High toughness and ductility
- Good resistance to corrosion and stress corrosion cracking
- Suitability for welding and fabrication under nuclear-quality requirements
- Compliance with stringent material traceability and quality documentation standards

The forgings (round bars and blocks) are suitable for machining of structural components, supports, or other high-integrity applications requiring robust mechanical performance.

The plates are suitable for fabrication, cutting, and welding operations for structural assemblies and pressure-retaining or structural components, depending on final qualification by the user.

The material was originally procured within the framework of the Vacuum Vessel Project and remains unused.

Dimensions and quantities are detailed in the annexed material list.

**FORGING (round bars and blocks):**

| Reference | Quantity | Diameter (mm) | Length (mm) | Width (mm) | Thickness (mm) | Location |
|---|---|---|---|---|---|---|
| MFOR010234- P54TS0172B | | | 1251 | 612 | 381 | Monfalcone (Italy) |
| Valbruna - MFOR011729 - MAD 28EY2N | | 286 | | | 361 | |
| Valbruna - MFOR011729 - MAD 28EY2N | | 286 | | | 361 | |
| Valbruna - MFOR011729 - MAD 28EY2N | | 286 | | | 361 | |
| Valbruna - MFOR011729 - MAD 28EY2N | | 286 | | | 361 | |
| Valbruna - MFOR011729 - MAD 28EY2N | | 286 | | | 361 | |
| Valbruna - MFOR011729 - MAD 28EY2N | | 286 | | | 361 | |
| Valbruna - MFOR011729 - MAD 28EY2N | | 286 | | | 361 | |
| KIND - MFOR011693 | | 388 | | | 360 | |
| Valbruna - MFOR011704 - 2281A-5-2 | | | 2390 | 190 | 151 | |
| KIND - MFOR011710 - P54-1SS1106 - MAD 3K6AXG | | | 341 | 192 | 191 | |
| KIND - MFOR011710 | 2 | | 341 | 191 | 195 | |
| KIND - MFOR011710 | | | 504 | 166 | 121 | |
| KIND - MFOR010240 - MAD 3EG2VX | | | 1323 | 492 | 477 | |
| KIND - MFOR011693 - MAD 2AW6B2 | 8 | 388 | | | 301 | |
| 2300A-5-1-4 | 1 | 285 | 475 | | | Bucharest (Romania) |
| 2304C-5-1-4 | 1 | 295 | 855 | | | Bucharest (Romania) |
| 2304C-5-1-5 | 1 | 295 | 855 | | | Bucharest (Romania) |
| 2300F-5-1-4 | 1 | 285 | 860 | | | Bucharest (Romania) |
| 2300F-5-1-5 | 1 | 285 | 880 | | | Bucharest (Romania) |
| 100-EXTRA | | 325 | 3610 | | | Gummersbach (Germany) |
| 9.62-01-EXTRA | | 325 | 3610 | | | Bucharest (Romania) |
| 264-01 / SP-201203938-259 | | 325 | 4848 | | | Ortona (Italy) |
| 13-02A | | 325 | 1740 | | | Gummersbach (Germany) |
| 13-02B | | 325 | 2560 | | | Gummersbach (Germany) |

**PLATES:**

| Heat and Lot | Reference | Length (mm) | Width (mm) | Thickness (mm) | Location |
|---|---|---|---|---|---|
| 866554.11 | MLAM- 0206864-19 | 7.4 | 2.4 | 40 | Monfalcone (Italy) |
| 872214.11 | MLAM-020864-20 | 5 | 2 | 40 | |
| 825751.11 | MLAM-020864-21 | 5 | 2 | 40 | |
| 825751.11 | MLAM- 0206864-21 | 7.4 | 2.4 | 40 | |
| 825674.11 | MLAM- 0206864-22 | 7.4 | 2.4 | 40 | |
| 879344.11 | MLAM- 020631-17 | 7.4 | 2.4 | 70 | |
| | MLAM- 020631-18 | 7.4 | 2.4 | 70 | |
| | MLAM020416-01 n.2 pz. | 0.2 | 7 | 40 | |
| | MLAM019926-01 | 1.7 | 0.7 | 40 | |
| | MLAM020864-05 | 1.2 | 1.1 | 40 | |
| S0194 | 875650.11 | 7.5 | 2.4 | 60 | Ortona (Italy) |
| S0194 | 875653.11 | 7.5 | 2.4 | 60 | |
| S0599 | 879348.11 | 7.5 | 2.4 | 60 | |
| S0193 | 875656.11 | 7.5 | 2.4 | 60 | |
| A172703 | 947631.11 | 5 | 2.4 | 80 | |

**Photos:**