Specials Steels and Superalloys for Nuclear Industry
Aubert & Duval: Your partner to energize your success

For almost 60 years Aubert & Duval has been a key partner for the development of forged and rolled products, especially those customized for the nuclear market.

With full vertical integration from melting, to remelting, hot converting and machining (rough machining through to near-net-shape parts), Aubert & Duval offers wide-ranging cutting edge capabilities for nuclear application.

Aubert & Duval has also put in place over many decades dedicated skills to co-design re-engineered metallurgical solutions with our clients.

Sales of alloys and superalloys have progressively expanded across a broad spectrum of primary circuit contractors and their subcontractors. We are proud to accompany first class companies such as FRAMATOME, VALINOX NUCLEAIRE and CEA and many other important customers and partners.

Aubert & Duval processes nickel-base alloys, high-performance steels, aluminum and titanium alloys.

Aubert & Duval melting capacities allow extra low cobalt achievement:
- nickel-base alloys (<150ppm)
- high performance steels (<300ppm)

Equipment

- **MELTING**
  - Melting furnaces (EAF, AOD, LF) up to 60 tons
  - Vacuum Induction Melting (VIM) up to 20 tons
  - Remelting furnaces (ESR, VAR) up to 30 tons

- **FORGING**
  - Open-die forging presses from 1,500 to 10,000 tons
  - Closed-die forging presses from 4,500 to 65,000 tons

- **ROLLING MILL**
  - 7-200 mm diameter bars

- **HEAT TREATMENT**
  - Solution and ageing furnaces
  - Horizontal and vertical quenching equipment

- **TESTING**
  - Immersion UT up to 13 tons (28,000 lbs)
  - Automated contact UT up to 20 tons
Combining metallurgical expertise, outstanding industrial capabilities and high manufacturing skill, Aubert & Duval is involved at each stage of primary circuit, i.e. nuclear reactor, steam generator, pressurizer, primary pump and connecting pipes. Whether working on homogenous structure of open-die forged massive parts, or wrought advanced materials with an ultra-low cobalt content, Aubert & Duval has the ambition of being a recognized manufacturer and supplier of safe, competitive nuclear solution to help its customers meet global energy challenges.

Aubert & Duval spends nearly 5% of its added value every year on Research & Development to meet this target.
Aubert & Duval follows the most stringent requirements in terms of grade composition, material integrity, dimension tolerances, quality documentation and quality control.

Aubert & Duval operates to RCC-M, RCC-MR, RCC-MRx, as well as to ASME code and many customer certifications: ITER, HAF604, RCC-M140, Framatome, Technicatome, Westinghouse, Doosan H.I., Fives Nordon, Naval Group, BAE Systems, VELAN

A complete offer of bars, plates and sheets for Nuclear Power generation applications

- **Billets**
  - Round bars
  - Flat & Square bars

- **Surface conditions**
  - Black
  - Peeled
  - Ground
  - Others

- **Heat-treated conditions**
  - Annealed
  - Hyperquenched
  - Normalized
  - Heat solution treated
  - Heat treated
  - Aged

- **Main sizes**
  - **Round Bars**
    - Ø 0.5-450
    - Ø 0.19-18
  - **Flat & Square Bars**
    - T ≤ 450
    - T ≤ 18
  - **Sheets**
    - length ≤ 2000
    - thickness ≤ 0.39
  - **Plates**
    - length ≤ 6000
    - width ≤ 4000
    - thickness ≤ 150

- **Applications**
  - Round bars
  - Square bars
  - Flat bars
  - Sheets & plates
  - Wire rods
  - Billets
  - Anti-vibration bars
  - Partition plates
  - Fuel assemblies
  - Steam generator tubes

- **Heat-treated conditions**
  - Annealed
  - Hyperquenched
  - Normalized
  - Heat solution treated
  - Heat treated
  - Aged

- **Certifications and specifications**
  - In addition to general certifications (ISO 9001, ISO 14001, ISO 18001), our plant laboratories are ISO 17025 accredited by third parties.

- **Main Processes**
  - Melting / Remelting
  - Rolling
  - Forging

- **Quality Assurance for Nuclear Safety**
  - Quality documentation
  - Quality commitments
  - Quality inspection
  - Release for shipment

- **Quality requirements analysis**
  - in the Request for Quotation package

- **Main Processes**
  - Melting / Remelting
  - Rolling
  - Forging
The information and the data presented herein are typical or average values and are not a guarantee of maximum or minimum values. Applications specifically suggested for material described herein are made solely for the purpose of illustration to enable the reader to make his own evaluation and are not intended as warranties, either express or implied, of fitness for these or other purposes. Aubert & Duval’s liability shall not extend, under any circumstances, to the choice of the Product and its consequences.