GRAVITY CAST PVT. LTD.
GRAVITY GROUP OF COMPANIES

# Material - ASME SA-336 Grade F22 Class 1

## Standard Specification for Alloy Steel Forgings for Pressure and High-Temperature Parts

**Group - Ferrous Mild Steel Alloys**
**Sub Group - ASME SA-336 Grade F22 Class 1 Alloy Steel Forgings for Pressure and High-Temperature Parts**
**Application - Intended for Valve, Pump, General Engineering, Automotive and other Industries**
**Grade Belongs to the Industry - Forgings**

| Chemical Composition | | |
|---|---|---|
| Carbon | C % | 0.050 - 0.150 |
| Manganese | Mn % | 0.300 - 0.600 |
| Phosphorus | P % | 0.025 max. |
| Sulphur | S % | 0.025 max. |
| Silicon | Si % | 0.500 max. |
| Chromium | Cr % | 2.000 - 2.500 |
| Molybdenum | Mo % | 0.900 - 1.100 |
| Iron | Fe % | Balance |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

| Heat Treatment |
|---|
| Annealing or Normalising & Tempering or Quenching & Tempering |

| Mechanical Properties | |
|---|---|
| Tensile Strength in Mpa | 415 - 585 |
| Yield Strength in Mpa | 205 min. |
| Elongation in % | 20 min. |
| Reduction of Area in % | 45 min. |
| Hardness in HB | - |
| Impact in Joule | - |

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| Cross Reference Table | | | |
|---|---|---|---|
| **Material** | **Standard** | **Country** | **Grade Belong to the Industry** |
| K21590 | UNS | USA | Steel |
| K21390 | UNS | USA | Steel |
| G 3203 SFVA F 22A | JIS | Japan | Steel |
| G 3203 SFVA F 22B | JIS | Japan | Steel and Forging |
| SA-336 Grade F22 Class 3 | ASME | USA | Steel and Forging |
| A 989 K21590 Class 3 | ASTM | USA | Steel |
| A 989 K21590 Class 1 | ASTM | USA | Steel |

**Further any inquiry to discuss with Gravity Cast Pvt. Ltd. – Gravity Group of Companies team member Call on +918469160029, or email marketing@gravitycastindia.com**

All information in our data sheets and website is indicative only and is not intended to be a substitute for the full specification from which it is extracted. It is intended to provide typical values to allow comparison between metal alloy option rather than a definitive statement of mechanical performance or suitability for a particular application as these will vary with temperature, product type and product application. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of business.