

# NUCLEAR

## Nuclear standards: Nuclear pedigree.

From the control of our raw materials to final inspection, certification and shipment we apply the highest standards of product integrity.

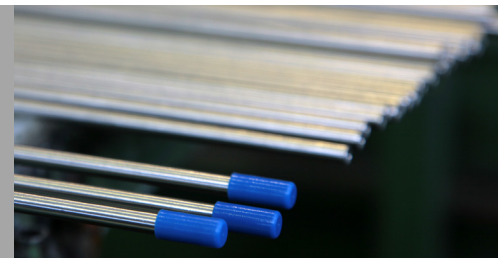
From the development of PWR power generation for the French (RCC-M) and US (ASME III) programs our knowledge and skills have developed across the global technologies: CANDU, VVER Rosatom, China CPR's and India PHWR's .

Applying our skills to the latest generation of EPR power plants whilst partnering with developing technologies and sciences such as CERN, ITER, Small Modular Reactors, and marine vessels.

## Products & Applications

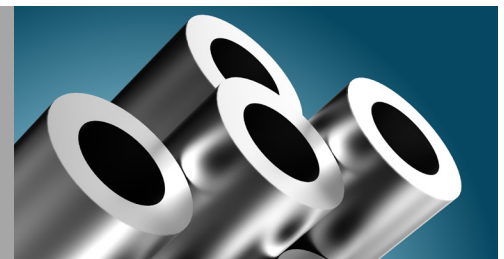
**Class 1, 2 & 3 Instrumentation tubes** according to RCC-M, ASME III, CSA N285 and HAF 604 standards.

**Dimensions:**  
 6 mm (1/4") to 25 mm (1")  
 Outside Diameter.



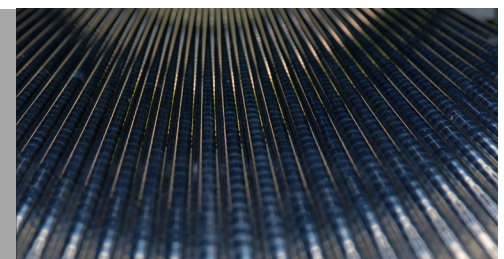
**Incore applications:** RCCA, Guide Thimble tubes, Neutron flux distribution, thermocouples.

**Dimensions:**  
 Outside Diameter from 1.6 mm (1/16") in straight or coiled forms to 280 mm (11.02").



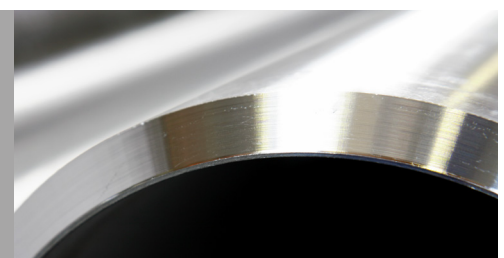
**Heat Exchanger tubes** used for critical components within the Nuclear Island, typically in the secondary circuit (class 2).

**Dimensions:**  
 12.7 mm (1/2") to 50.8 mm(2") Outside diameter, straight lengths or U tube form up to 43 m (141 ft) long.



**Nuclear pipes for Class 1,2 & 3 Piping** for Nuclear steam supply systems and non-nuclear island applications such as Nuclear fuel reprocessing.

**Dimensions:**  
 6 mm (1/4") to 280 mm (11.02") OD.



## Nuclear Grades

MST designation	Nearest equivalent standard		Typical chemical composition <sup>1)</sup>					
	UNS	EN	C <sub>max</sub>	Cr	Ni	Mo	Cu	Others
DMV 304L	S30403	1.4306	0.03	19.0	11.0			Co < 0.1
DMV 4335	S31002	1.4335	0.02	25	21	≤0.2	-	N ≤0.11
DMV 321	S32100	1.4541	0.08	18.5	10.5			Ti > 5 x C < 0.6%
DMV 316L	S31603	1.4404		0.03	17.0	12.0	2.25	
DMV 316 LN	S31653	1.4429		0.03	17.0	12.5	2.75	N > 0.06 < 0.08
DMV 800	N08800	1.4876	0.08	21.0	32.0			Ti < 0.40
DMV 600 L	N06600	2.4817	0.025	16.0	76.0			Fe 8
DMV 690	N06690	2.4642	0.02	29.0	60.0			Fe 9
DMV 400	N04400	2.4360	0.15		65.0		30.0	Fe 2; Mn 1.5

## Mechanical Properties

MST designation	Nearest equivalent standard		Density		Min. mechanical prop. at RT			
	UNS	EN			Rp0.2 Yield Strength		Rm Tensile Strength	
			g/cm <sup>3</sup>	lb/in <sup>3</sup>	MPa	ksi	MPa	ksi
DMV 304L	S30403	1.4306	7.9	0.29	170	25	485	70
DMV 4335			7.9	0.29	205	30	500	31
DMV 321	S32100	1.4541	7.9	0.29	170	25	485	70
DMV 316L	S31603	1.4404	8.0	0.29	170	25	485	70
DMV 316 LN	S31653	1.4429	8.0	0.29	205	30	515	75
DMV 800	N08800	1.4876	8	0.29	210	31	500	73
DMV 600 L	N06600	2.4817	8.4	0.30	180	26	550	80
DMV 690	N06690	2.4642	8.2	0.29	205	30	585	85
DMV 400	N04400	2.4360	8.8	0.32	180	26	450	65

## Quality

Our Nuclear quality system approvals reflect our experience and commitment to global Nuclear technologies.

- √ ASME III certified
- √ HAF 604- NNSA certified
- √ RCC-M compliant, Label Fournisseur AREVA
- √ Extensive Customer and design code accreditations.

## Adding Value, Adding Service

Adding value by providing finished machined reactor core liner components in ferritic stainless combined with Ni alloy 690.

## Global Manufacturing, Local Service

Bringing together our manufacturing facilities in Germany, France, Italy and USA, our Global Sales Team is at your service, ensuring we provide the optimum solution to your requirements.

## Coiled Supply Form



### Mannesmann Stainless Tubes

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