



STAINLESS STEEL IN RADWAG PRODUCTS

STANDARD AND SPECIAL APPLICATIONS

Characteristics

Stainless steel, also known as waterproof steel, is popularly associated with higher resistance to external conditions and corrosion. In fact, the term „stainless steel“ covers the whole family of quality steels differing from each other in chemical composition, degree of resistance and properties. In practice, this means that one type of stainless steel can have several times the corrosion resistance of another.


Resistance

The degree of corrosion resistance is highly dependent on the quantity of chromium added to the steel. A protective passivation layer, i.e. a thin oxide film, forms on the surface of the steel, invisible to the naked eye. It is formed naturally as a result of a chemical reaction between the chromium contained in stainless steel and the oxygen contained in the air. It prevents corrosion of steel and influences its resistance. Increased chromium content and the addition of other alloying elements, such as nickel and molybdenum, further increase the resistance of steel.

Two stainless steel grades are used in RADWAG scales: 304 and 316.

AISI 304


AISI 304 is the most commonly used steel grade in RADWAG products, mainly used for the majority of weighing panes. It is also used for the manufacture of structural elements in products marked ‚stainless‘ or ‚waterproof‘. AISI 304 steel is also used for indicators and weighing terminals housings.



AISI 304

AISI 316

AISI 316 steel is used to manufacture 1-load-cell platforms of increased resistance, marked as „HR“. It is used to design weighing pans and structural elements of HR platforms. AISI 316 steel is also used in some models of checkweighers.



AISI 316

Stainless steel in RADWAG balances and scales:

LABORATORY BALANCES				AISI 304	AISI 316
				Weighing pan	■
Ultra-microbalances	Microbalances	Analytical balances		Weighing chamber component	■
				Weighing pan	■
Precision balances					
				Weighing pan	■
Moisture analyzers				Weighing chamber component	■
INDUSTRIAL SCALES: HIGH RESOLUTION SCALES / 1-LOAD-CELL SCALES				AISI 304	AISI 316
				Weighing pan	■
High resolution scales	Platform scales	Multifunctional scales	Postal scales	Mechanical design	
				Post	
				Indicator / terminal	■
				Weighing pan	■
Stainless steel high resolution scales	Waterproof platform scales	Stainless steel multifunctional scales		Mechanical design	■
				Post	■
				Indicator / terminal	■
				Weighing pan	■
Waterproof and acid resistant platform scales	Waterproof and acid resistant multifunctional scales			Mechanical design	■
				Post	■
				Indicator / terminal	■
4-LOAD-CELL INDUSTRIAL SCALES				AISI 304	AISI 316
				Platforma	
Platform scales	Pallet scales	Beam scales		Mechanical design	
				Indicator / terminal	■
				Platforma	■
Stainless steel platform scales	Stainless steel embedded scales	Stainless steel pallet scales	Stainless steel beam scales	Mechanical design	■
				Indicator / terminal	■
				Platforma	■
Stainless steel ramp scales	Stainless steel ramp scales with lifted platform			Mechanical design	■
				Indicator / terminal	■
WEIGHING INDICATORS AND TERMINALS				AISI 304	AISI 316
				Housing	■
Weighing indicators	Weighing terminals				



At the customer's request, it is possible to design any product or selected element (e.g. weighing pan) using AISI 316 steel instead of the standard AISI 304. This is a special design and as such requires individual arrangements.

Exemplary stainless steel applications:

GRADE	AISI 304	AISI 316
Symbol	AISI 304	AISI 316
	1.4301	1.4401
	0H18N9	0H17N12M2T
	X5CrNi18-10	X5CrNiMo17-12-2
Intended use	Corrosion neutral environment	Highly corrosive environment
	–	Highly saline environment (e.g. coastal areas)
	Food industry without direct contact with corrosive substances	Food industry with direct contact with corrosive substances
	Meat industry without direct contact with brine and corrosive substances	Meat industry with direct contact with brine and corrosive substances
	Fish industry without direct contact with products with high salt content	Fish industry with direct contact with products with high salt content
	Pharmaceutical industry without direct contact with aggressive substances	Pharmaceutical industry with direct contact with aggressive substances
	Chemical industry without direct contact with aggressive substances	Chemical industry with direct contact with aggressive substances

Maintenance

The user of products made of stainless steel is obliged to observe the rules of their use, resulting from the characteristics of a given steel grade, and to keep them clean and systematically maintained.

Do not use powders or other abrasive substances and agents containing chlorine, salt or bleach to clean stainless steel products. Even a small amount of chlorine in the cleaning products can cause permanent damage to the chromium oxide coating responsible for the anti-corrosion properties and lead to corrosion.

Dirty elements can be cleaned with a soft cloth slightly moistened with a solution of water and a mild detergent (e.g. soap or dishwashing liquid) and then rinsed with clean water and wiped dry

Warranty

For detailed warranty conditions read the warranty certificate that comes with the product. With regard to stainless steel components, the warranty does not cover mechanical damage, natural wear or misuse.

The main causes of corrosion precluding the manufacturer's warranty:

- Working in an aggressive environment, exceeding the resistance of the steel used.
- No systematic maintenance, no removal of heavy contamination.
- Contamination during operation (e.g. foreign metallic pits caused by the use of angle grinders in the vicinity).
- Contact of stainless steel with carbon steel.