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## Lecture 1. Materials and sanitary features of the dairy equipment

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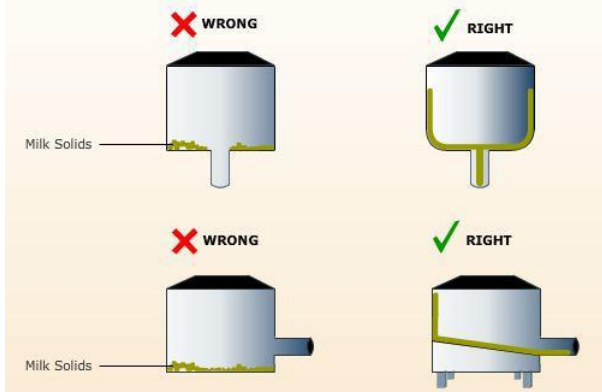
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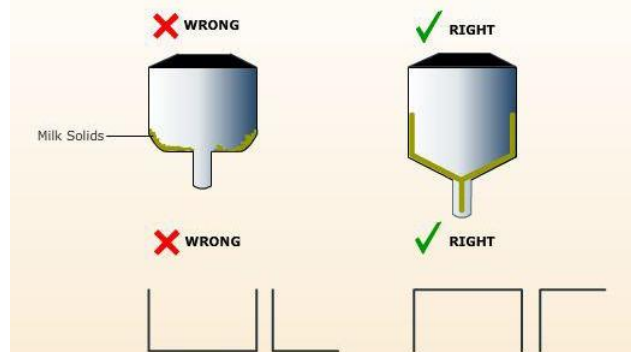


1. Introduction
2. Sanitary features
3. Specific requirements of Dairy products
4. Equipment design

Dairy Equipment design



Dairy Equipment design



Dairy Equipment design

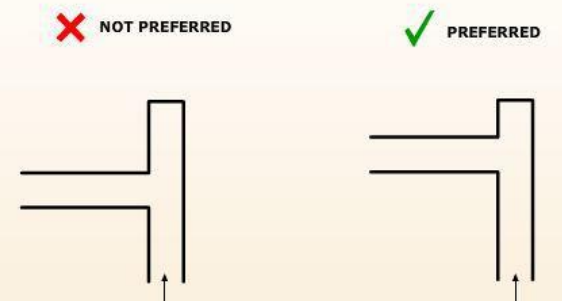




Table 1.1 Characteristic of different alloys of Stainless Steel:

Chromium Types	Martensitic	Hardenable (403,410,414,416,416Se,420,431,440 series)	400 series contain large amounts of chromium and little or no nickel
	Ferritic	Non-hardenable (405,430,430F,430Se,442,446)	
Chromium- Nickel Types	Austenitic	Non-hardenable, except by cold working (201,202,301,302,302B,303,303Se,304,304L,305,308, ,309,309S,310,310S,314,316,316L,317,321,347,348)	300 series contain large amounts of chromium and nickel
	Semi-austenitic	Strengthened by ageing or precipitation-hardening	
		Precipitation-hardening	
Martensitic	Precipitation hardening		



## 4. Materials commonly used in Dairy Industry

**Table 1.2** Materials used as structural components

Cast Iron	Difficult to weld, brittle in nature  Cannot be forged	Heavy equipment beds  Main castings of engines  Gear box cases	2 to 4.5%
Wrought Iron	Easily welded, tough, ductile, malleable	Chains, Hooks, couplings, rivets, shock loading parts	0.06 to 0.08%
Mild Steel	Highly ductile, malleable, tough, strong, easily welded, possesses magnetic properties, can be cast & forged	Structural elements, building equipment, conveyor frames	0.1 to 0.25%



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*Thank You*