

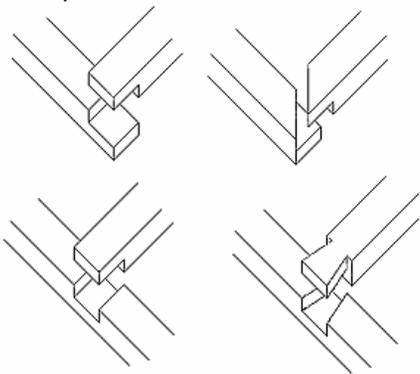


## Glossary

### AMI Equipment Sanitary Design Checklist

Principle #	Requirement	Definition and source
1.2	...acceptable RLU....	RLU is defined as...."Relative Light Unit". Standards must be developed for each operation given the ATP monitoring tools selected for use.
2.2	Stainless Steel shall be AISI 300 series or better	The American Iron and Steel Institute ("AISI") assigned the designation "type 300 stainless steel" to 18-8 stainless steel. The AISI 300 Series stainless steels are all variations on the original 18-8 alloy (18% chromium, 8% nickel). The higher chromium content, along with the addition of nickel, imparts greater corrosion and oxidation resistance, and superior ductility in the annealed condition. Unlike basic carbon steel or 12% Cr stainless, this alloy is non-magnetic. Typically, 304, 316 or 316L, stainless steel is used in food processing.
2.8	Metals are compatible with each other	Indicates that a metal in contact with other metals must be compatible and will not result in galvanic corrosion (where metals in contact with each other oxidize or corrode).
3.12	All air, vacuum, & product hoses are transparent or opaque, & meet product contact surface guidelines.	Suggest the use of flexible, transparent lines for air or product to see if there are accumulations of product / moisture or water in a line that could result in a micro or water / product cross contamination issue where possible. Source: AMI
5.1	All rotating members, such as drive sprockets or belt pulleys, are to be solid or filled with dye and fully sealed with continuous welds.	Filling a small percentage (15 – 25%) of the available space in a member with dye would allow for coverage of the interior which would be evident externally if a leak occurred. The cavity does not need to be filled to achieve this. The unit should be completely welded first, then you would stand the cylinder vertically and drill a small hole in one of the cylinder ends, insert the liquid and then weld the small hole closed. Source: Joe Stout

6.1	Surface Texture of a product contact surface shall not exceed 32 $\mu$ inch	<p>Surfaces shall be free of imperfections such as pits, folds, cracks and crevices. Surface textures shall have a maximum Ra of 32 <math>\mu</math> in (0.81 <math>\mu</math> m). Average roughness Ra, is the most commonly specified parameter for surface finish measurements.</p> <p>Ra is calculated by an algorithm that measures the average length between the peaks and valleys and the deviation from the mean line on the entire surface within the sampling length. Ra averages all peaks and valleys of the roughness profile, and then neutralizes the few outlying points so that the extreme points have no significant impact on the final results.</p>  <p>Roughness may be measured using contact or non-contact methods. Contact methods involve dragging a measurement stylus across the surface; these instruments include <a href="#">profilometers</a>. Non-contact methods are also.</p> <p>Source: Various</p>
6.2	Surface Texture of a non-product contact surface shall not exceed 125 $\mu$ inch	See above
6.3	Internal corners and angles shall have a smooth and continuous radius of at least 1/8 inch (angles of less than 135°)	For effectiveness and efficiency of cleaning food processing equipment, all areas must be accessible and subject to the application of mechanical action, detergent and sanitizer penetration. Sharp internal angles are hard to access and penetrate with liquids, while gently curved corners allow access to remove soil and biofilms.

6.4	There are no lap joints	<p>A "lap Joint" describes joining two pieces of material by overlapping them without a hermetic seal. An example: two flat 6"x 6" stainless steel plates are stitch welded – the surface area between the two plates is not accessible or cleanable. It would be acceptable if the plates were continuously welded.</p> <p>Examples are:</p> 
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6.5

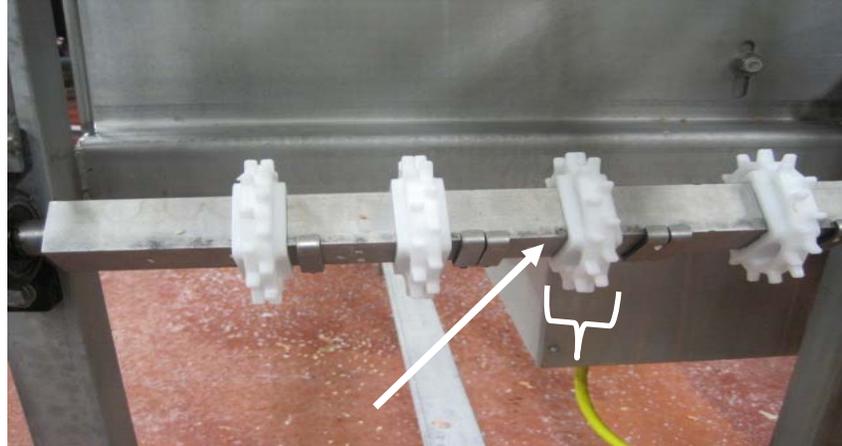
Hermetically sealed spacers are used to allow space between two adjoining pieces...

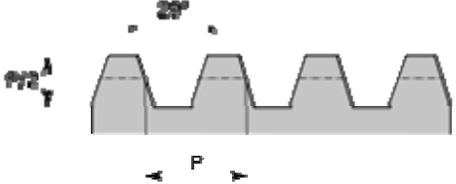


6.9

Sleeved assemblies (e.g. bushings, sprockets, bearings) are no longer than 1-1/2 inches...

To allow for cleaning, including detergent and sanitizer penetration and mechanical action these bushings should be kept to a maximum width of 1 1/2 inches and if present these should either be movable on a fixed shaft to shift to gain access to clean the shaft or the shaft should be removable to allow access for cleaning.



6.10	Press and shrink fits are not used	These are not permitted for use as they do not allow for movement and associated cleaning and penetration of detergents, mechanical action or sanitizers.
6.12	Fasteners which may be a product contact surface must utilize the ACME 60° stub thread	<p>The stub thread has to do with the depth and pitch of a thread. For example a 29 degree is a very tight fitting thread. Really has to do with the ability to remove soil. To keep it simple, the best way to describe it is the difference of cleaning a (V) shaped rather than (U) shaped threaded rod, the U shaped (60) would be easier to clean than the V shaped (29) thread.</p>  <p>Source: AMI and Wikipedia</p>
7.4	Separation between product contact and non-product contact areas prevents cross contamination during operation	Not contact surface areas are typically made to different standards (such as surface roughness) and exposed to a different level of risk due to a number of factors. Sharing contact between zone 1 and other zones increases the likelihood of cross contamination.

7.7	Shafts passing through a product zone shall have an air gap to prevent product contamination	<p>An air gap will disrupt the flow of material (either by pressure or vacuum) from a non-product to a product zone area. This issue occurs mainly in mixers or blenders when a shaft supporting paddles or blades passes through the product zone.</p> <p>Below the drive motor is separated from the blender wall to prevent oil or grease from entering the blender.</p> 
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