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Auger Flighting Design Considerations



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Keywords: Auger, Conveyors, Flighting

1 Purpose and Scope

This Engineering Practice is a guide for designing conveyor augers using steel helicoid flighting and for specifying helicoid flighting as generally used in agricultural equipment.

2 Normative Reference

The following standard contains provisions which, through reference in this text, constitute provisions of this Engineering Practice. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this Engineering Practice are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Standards organizations maintain registers of currently valid standards.

ANSI B32.3, Preferred Metric Sizes for Flat Metal Products

3 Flighting Material

3.1 Physical properties generally limit the number of materials that can be formed into helicoid flighting.

3.2 Present day helicoid manufacturing machines are designed for ferrous metals that are ductile and are therefore generally not used in manufacture of auger flighting from non-ferrous and plastic materials. Other means, such as molding, extruding, forming, and casting, must be developed for these materials. The heavy deformation of the material as it goes through the forming rolls of the flighting machine demands a material that is very ductile and which will stand large amounts of elongation and bending without fracture and wrinkling.

3.3 Hot rolled and cold rolled carbon steels with specifications in the area of AISI (American Iron and Steel Institute) 1006, 1008, 1010, and 1012 and hardnesses of no more than 115 to 140 BHN (Brinell Hardness Number) may be used satisfactorily. The more difficult the flighting is to make, the lower the carbon content must be in the strip. In many cases, it is necessary to use fully killed, fine grained steel. Stainless steel requires special consideration. Consult manufacturer before designing.