

ATLT-1060: LAYOUT & FABRICATION PROCEDURE

Cuyahoga Community College

Viewing: ATLT-1060 : Layout & Fabrication Procedure

Board of Trustees:

2015-12-03

Academic Term:

Spring 2019

Subject Code

ATLT - AIT-Lifting Technologies

Course Number:

1060

Title:

Layout & Fabrication Procedure

Catalog Description:

Introduction to the layout and fabrication techniques for slings and rigging gear. Covers the calculations and sizing of various types of slings. Includes practical hands on learning of techniques of layout and fabrication to manufacture slings and the basics of reading drawings, technical drawings, and prints.

Credit Hour(s):

1

Lecture Hour(s):

1

Requisites

Prerequisite and Corequisite

Departmental approval: admission to Lifting Technologies apprenticeship program.

Outcomes

Course Outcome(s):

Discuss the different types of wire rope slings and describe the differences associated with each, including use/application and fabrication.

Objective(s):

1. List and define the terms related to wire rope slings.
2. List the basic types of wire rope slings.
3. List the various multi leg configurations.
4. Define and configure various working load limit.

Course Outcome(s):

Discuss the different types of wire rope assemblies and describe the differences associated with each, include use/application and fabrication.

Objective(s):

1. List and define the terms related to wire rope assemblies.
 2. List the basic types of wire rope assemblies.
 3. Define Swaging and Speltering Processes.
 4. Explain finish diameter swaging charts.
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Methods of Evaluation:

1. Participation
2. Assignments
3. Quizzes & Exams
4. Practical application projects

Course Content Outline:

1. Wire Rope Slings
 - a. Terminology
 - i. Flemish
 - ii. Multi-Part
 - iii. 1-Part
 - iv. 3-Part
 - v. 6-Part
 - vi. 7-Part
 - vii. 8-Part
 - viii. 9-Part
 - ix. Hand Splice
 - x. 2-Leg Bridle
 - xi. 3-Leg Bridle
 - xii. 4-Leg Bridle
 - xiii. Man Basket Bridle
 - xiv. Thimble Eye
 - xv. Standard Eye
 - xvi. Oversized Eye
 - b. Wire Rope Sling Types
 - i. Flemish
 - ii. 1-Part
 - iii. 3-Part
 - iv. 6-Part
 - v. 7-Part
 - vi. 8-Part
 - vii. 9-Part
 - viii. Hand Splice
 - c. Sling Configurations
 - i. 2-leg bridle
 - ii. 3-Leg Bridle
 - iii. 4-Leg Bridle
 - iv. Man Basket Bridle
 - d. Working Load Limits
 - i. Charts
 1. Catalog Pages
 2. Catalog Breaking Strengths
 - ii. Calculations
 1. Sling Angles
 2. Vertical, Choker, Basket
 3. Nominal Breaking Strength
 4. Splicing Efficiency
2. Wire Rope Assemblies
 - a. Terminology
 - i. Boom Pendant
 - ii. Critical Crane Cable/Exact Cut
 - iii. Ready Stock
 - iv. Hoist Cables
 - v. Swage Sockets
 - vi. Spelter Sockets
 - vii. Buttons
 - b. Wire Rope Assembly Types

- i. Boom Pendant
- ii. Critical Crane Cable/Exact Cut
- iii. Hoist Cable/Button Job
- iv. Small Cable Assemblies/Nico Press
- c. Swaging versus Spelter Processes
 - i. Open and Closed Swage Socket
 - ii. Open and Closed Spelter Socket
 - iii. Installation and Fabrication
 - iv. Safety
- d. Swaging Charts
 - i. Die Selection
 - ii. Finished Diameter
 - 1. Minimum
 - 2. Maximum

Resources

Mazzella Lifting Technologies. *Mazzella ISO 9001:2008 Quality Training Manual*. 6th. Cleveland, OH: Mazzella Lifting Technologies, 2013.

Wire Rope Technical Board. *Wire Rope User's Manual*. 4th. Alexandria, VA: Wire Rope Technical Board, 2005.

Wire Rope Technical Board. *Wire Rope Sling User's Manual*. 3rd. Alexandria, VA: Wire Rope Technical Board, 2007.

Resources Other

Websites:

<http://www.mazzellacompanies.com/mazzellalifting>

<http://www.thecrosbygroup.com/>

Instructional Materials:

Mazzella Companies Technical Manual and Commercial Product Catalog – 2013

Mazzella Companies Working Load Limit Pocket Guide – 2013

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