elastotec™

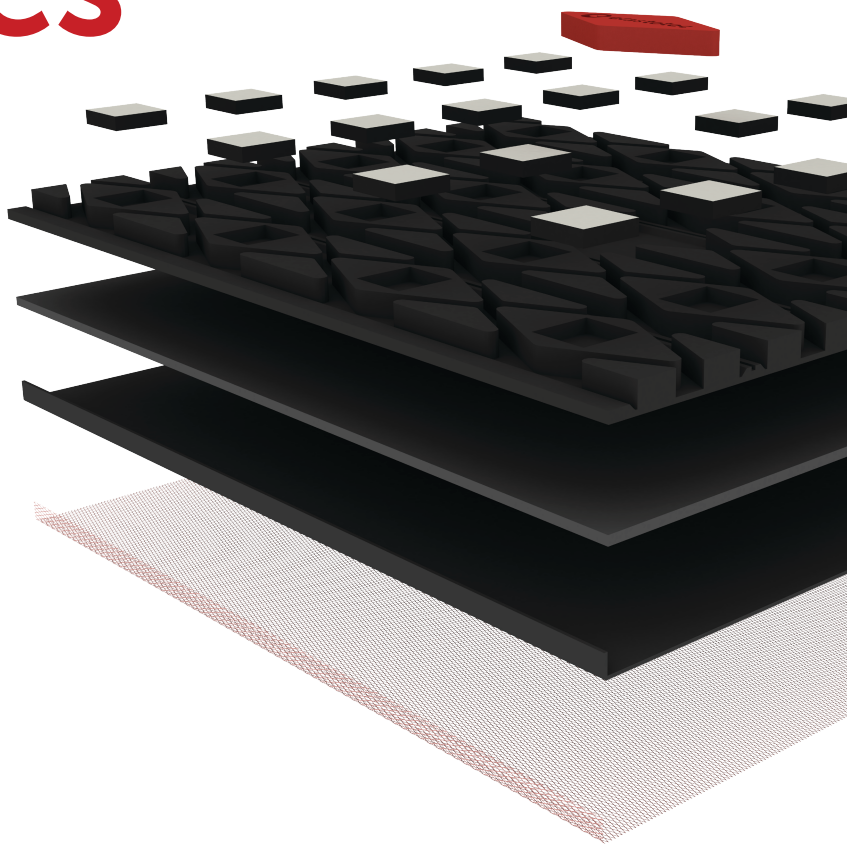
Training Course – Optimising Conveyor Design Using Lagging Select™ Engineering Tool

This course is for engineering personnel with an interest in improved conveyor performance based around the conveyor belt/pulley lagging interaction.

Course Objectives

This course is for engineering personnel with an interest in conveyor design and optimisiation of the conveyor belt/pulley lagging interaction.

The course is designed to equip you with an understanding of the key parameters that impact performance of the lagging/ belt interaction, so that you can make decisions that provide the optimum service life for the pulley lagging, conveyor belt and the belt splices.



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Engineered to Perform

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Course Programme

I. Pulley lagging engineering

- Why is engineering in pulley lagging necessary?
- 4 pillars for lagging performance.

II. Drive pulleys

- Main challenges of drive pulleys
- Localised slippage
    a. Torque transfer with no damage to lagging and belt
    b. Torque transfer with localised slippage
    c. CEMA method limitations
    d. Shear stresses, normal stresses, and belt contracture
    e. Reduction/elimination of localised slippage
        i. Rigid vs flexible laggings
        ii. Lagging thickness and hardness
        iii. Contact area and size of diamonds in rubber lagging
        iv. Grooving design
        v. Ceramic coverage
- Lagging fatigue due to cyclic deformation
    a. Drive pulleys: Normal and shear stresses
    b. Reduction of lagging flexibility to reduce fatigue
        i. Increase in diamond size in rubber lagging
        ii. Increase in contact area to reduce localised stresses and fatigue Ceramic coverage
    c. Ceramic coverage: Localised stress per ceramic tile

Course Programme

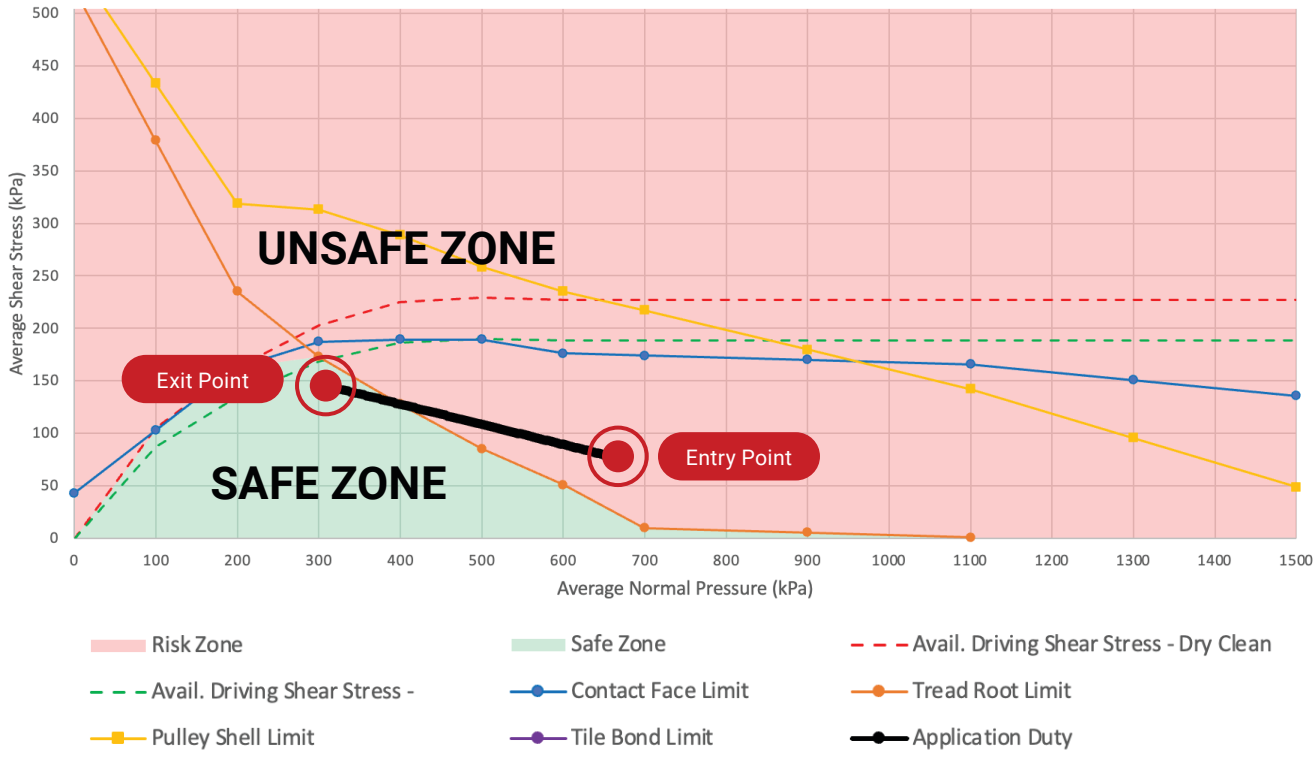
- Lagging selection for drive pulleys
    a. Flexible low tension belts vs stiff high-tension belts

III. Non drive pulleys in contact with the carry side of the belt

- Main challenges of non-drive pulleys in contact with the carry side of the belt
- Belt carry cover wear --> Impact on lagging
- Belt carry cover wear --> Impact on belt cords and splices
- New belt operating in contact with uneven worn pulley lagging --> Impact on belt cords and splices
- Material build up on lagging
    a. Lagging flexibility to prevent material build up and damage to belt
    b. Lagging grooves design to prevent material build up and damage to belt
    c. Dimple ceramic tiles vs smooth ceramic tiles
- Lagging selection for non drive pulleys in contact with the carry side of the belt
    a. First years of belt life
    b. Last years of belt life

Fatigue Analysis

Lagging Envelope: Elastotec Extreme Rubber, 25mm (1")mm, 65 Duro



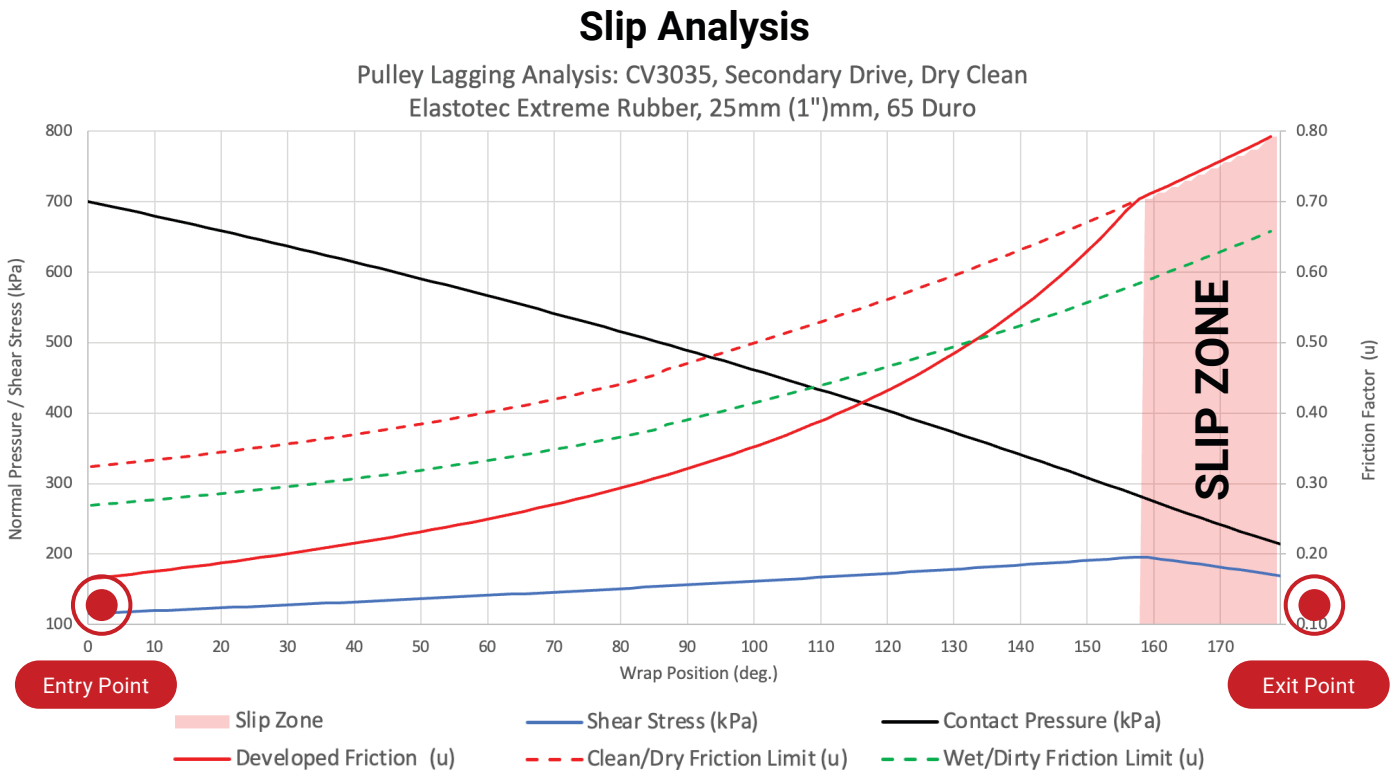
Course Programme

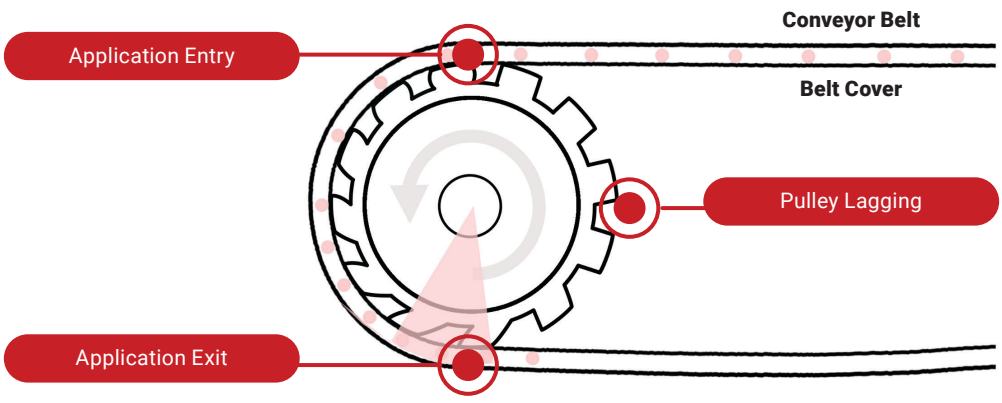
IV. Other non drive pulleys

- Injection pulleys
- Tail pulleys
- Take up pulleys
- Snub pulleys

V. Lagging Select Software and Field case studies

VI. Pulley lagging Selection matrix





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