

599-2023 Appendix B-R1 (231115)  
Non-Circular Design Curves

## Instructions to Bidder

The selection of CIPP minimum thicknesses for non-circular liners for Bidding Purposes shall be completed in accordance with the appropriate design curves provided in Appendix B. The design curves provide thickness requirements based on a range of long-term flexural strength and modulus values for the conditions noted in the design tables.

Bidders shall determine minimum liner thicknesses based on the maximum thickness obtained from:

- S-MA50014578, the greater of:
  - Appendix B 1-1
  - Appendix B 1-2
- S-MA70019662, the greater of:
  - Appendix B 2-1
  - Appendix B 2-2
- S-MA50007563:
  - For non-reinforced CIPP, the greater of:
    - Appendix B 3-1
    - Appendix B 3-2
  - For reinforced CIPP, the greater of:
    - Appendix B 3-3
    - Appendix B-3-4

Thicknesses for Bidding shall also be increased as required to facilitate processes based on the Contractor's intended means, method, and techniques.

### Methodology:

Design Methodology: ASCE MOP 145

Non-Reinforced CIPP:

- Applicable Long Term (LT) Flexural Strength
  - 15.5 MPa to 27.9 MPa
- Applicable Long Term (LT) Flexural Modulus
  - 1207 MPa to 1465 MPa

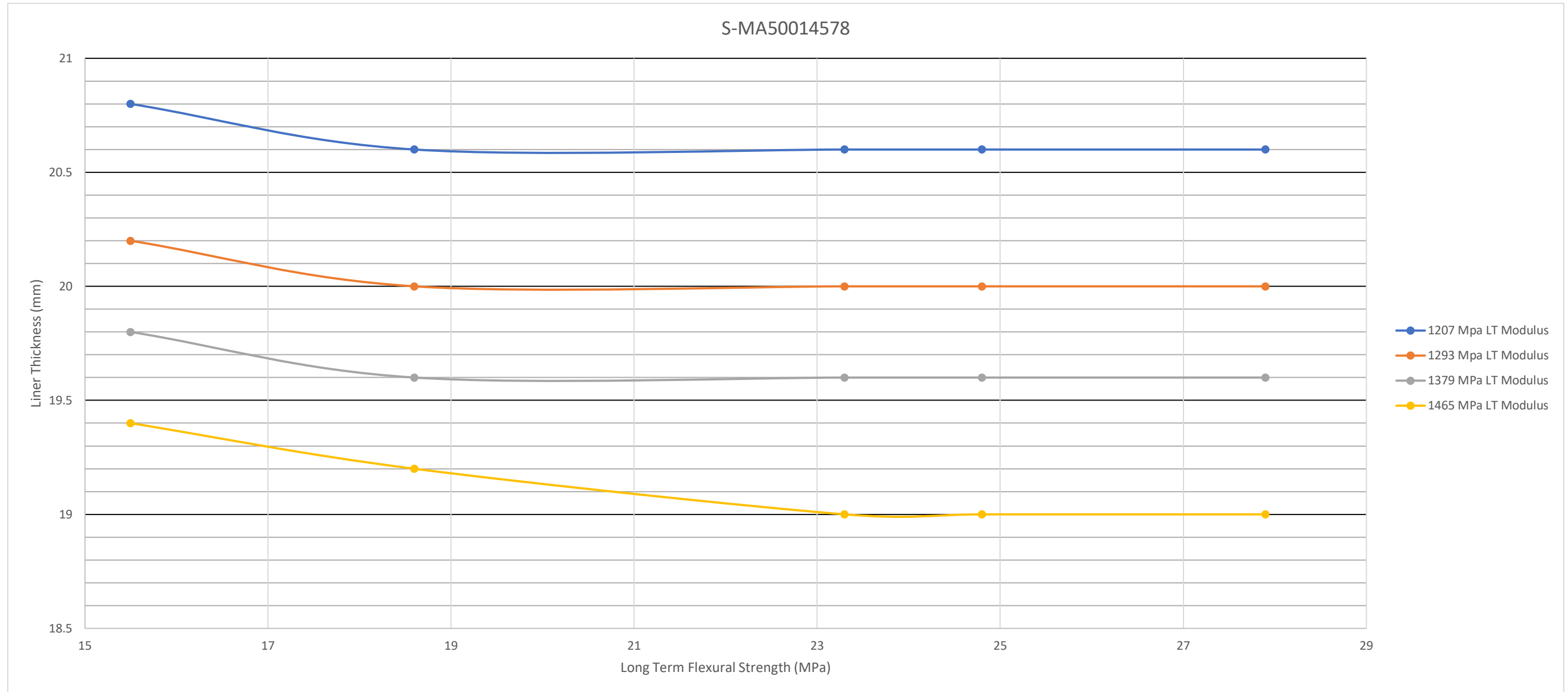
Soil Density: 18.85 kN/m<sup>3</sup>

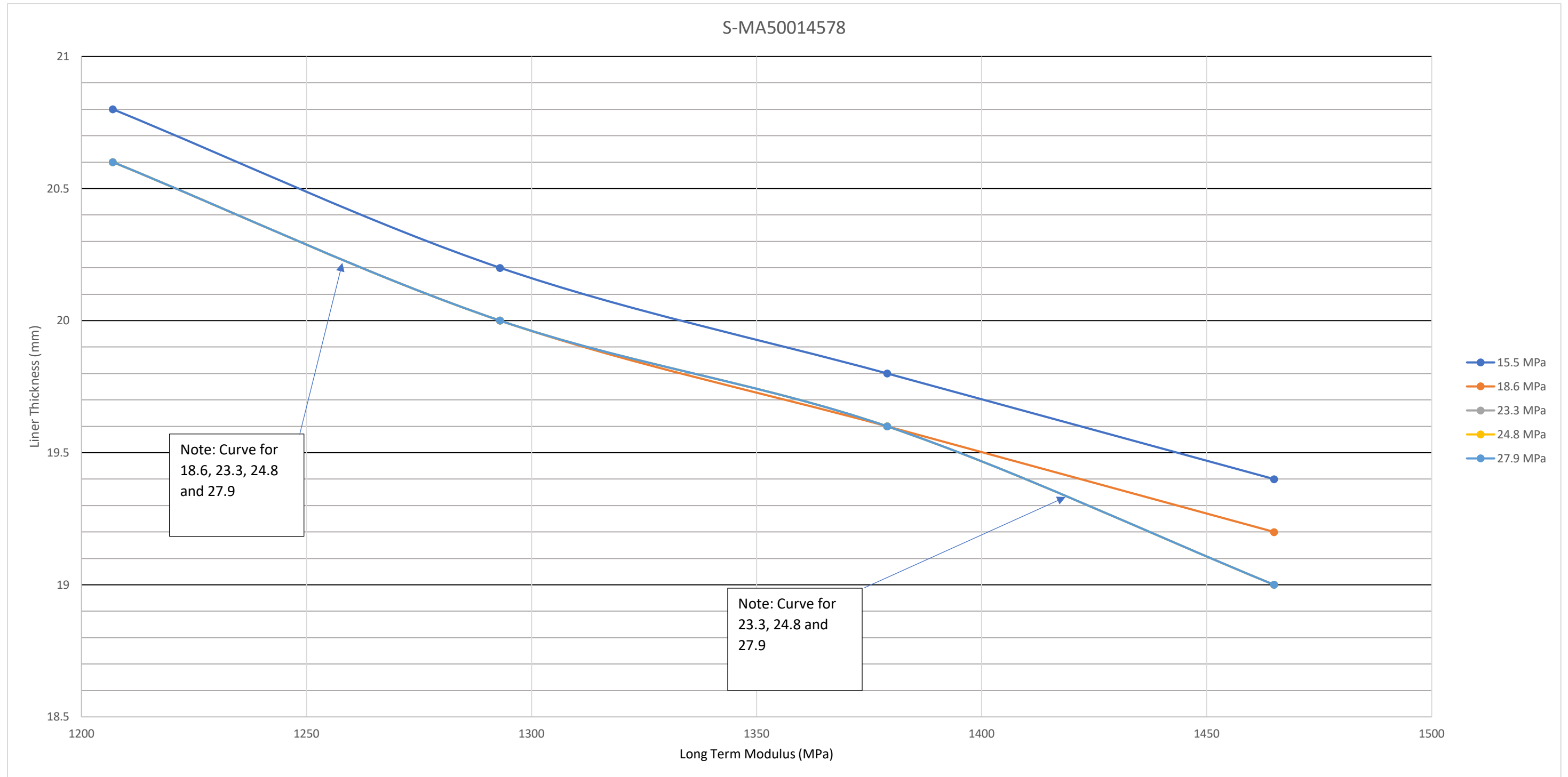
Modulus of Soil Reaction: 6.890 MPa

Assumed Ground Water Table: 2.0 m below ground surface

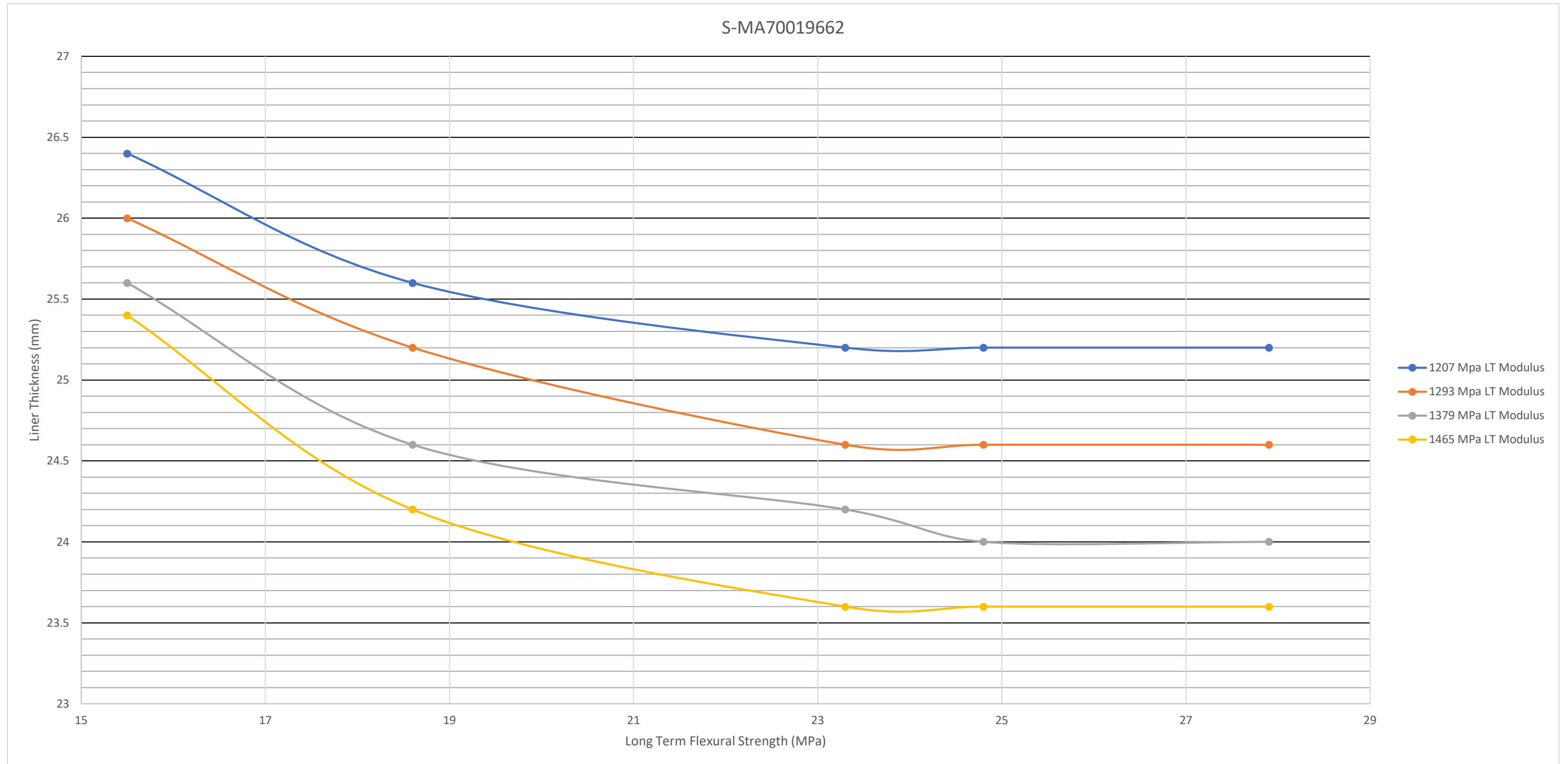
Appendix B 1-1

S-MA50014578 – Select applicable curve based on LT Modulus and determine thickness based on LT Flexural Strength

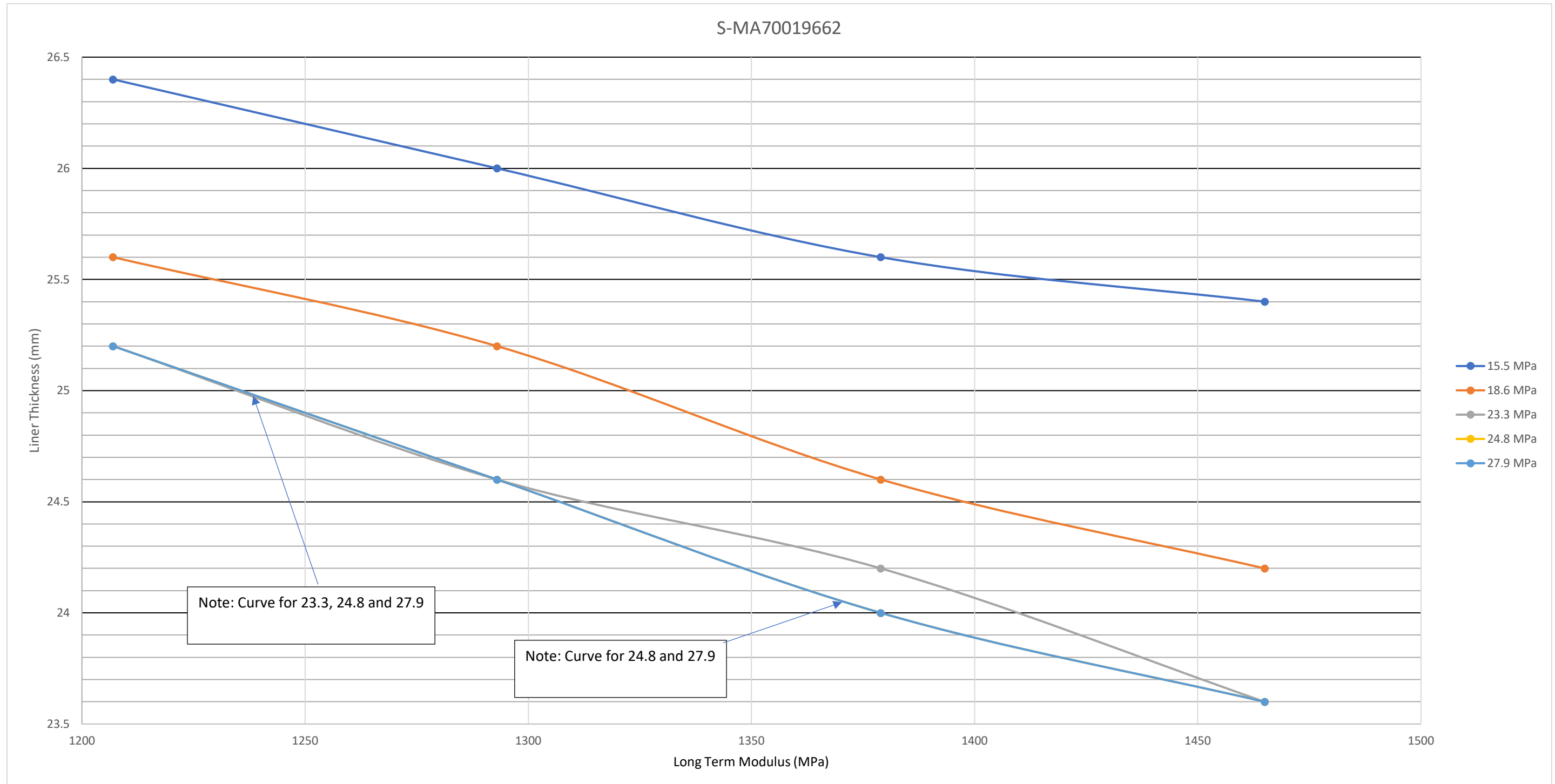




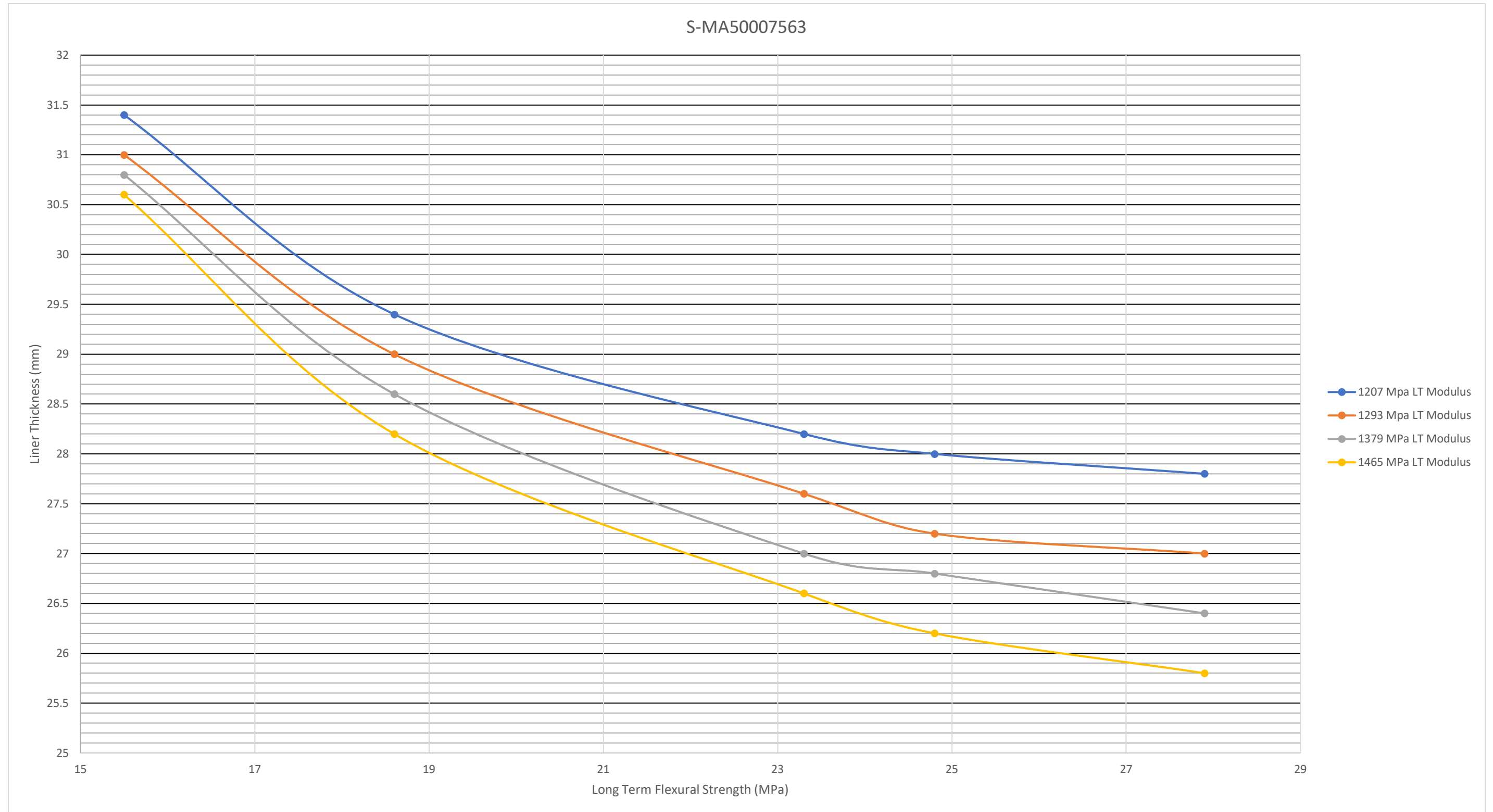
S-MA70019662 – Select applicable curve based on LT Modulus and determine thickness based on LT Flexural Strength



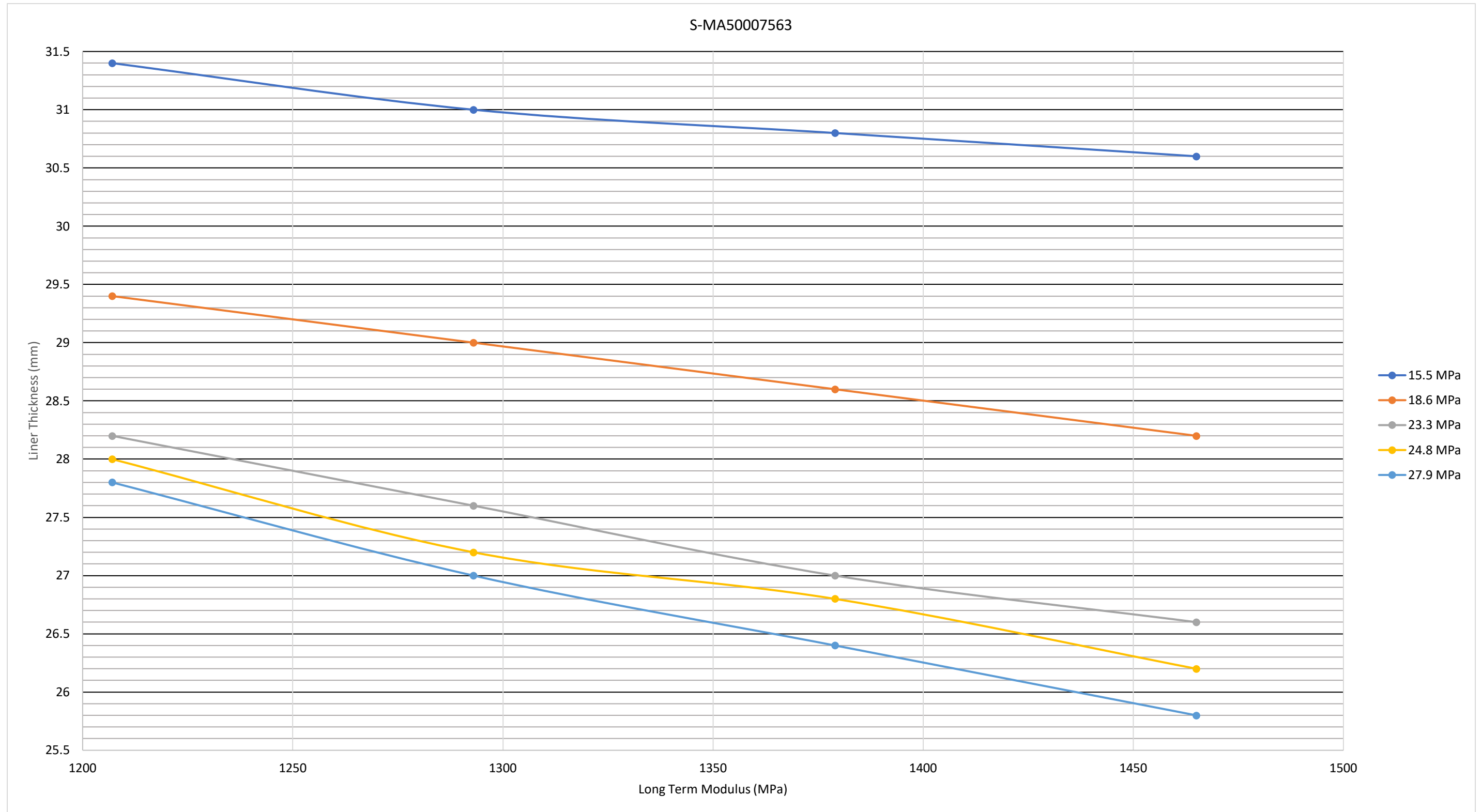
S-MA70019662 – Select applicable curve based on LT Strength and determine thickness based on LT Modulus



S-MA50007563 – Select applicable curve based on LT Modulus and determine thickness based on LT Flexural Strength

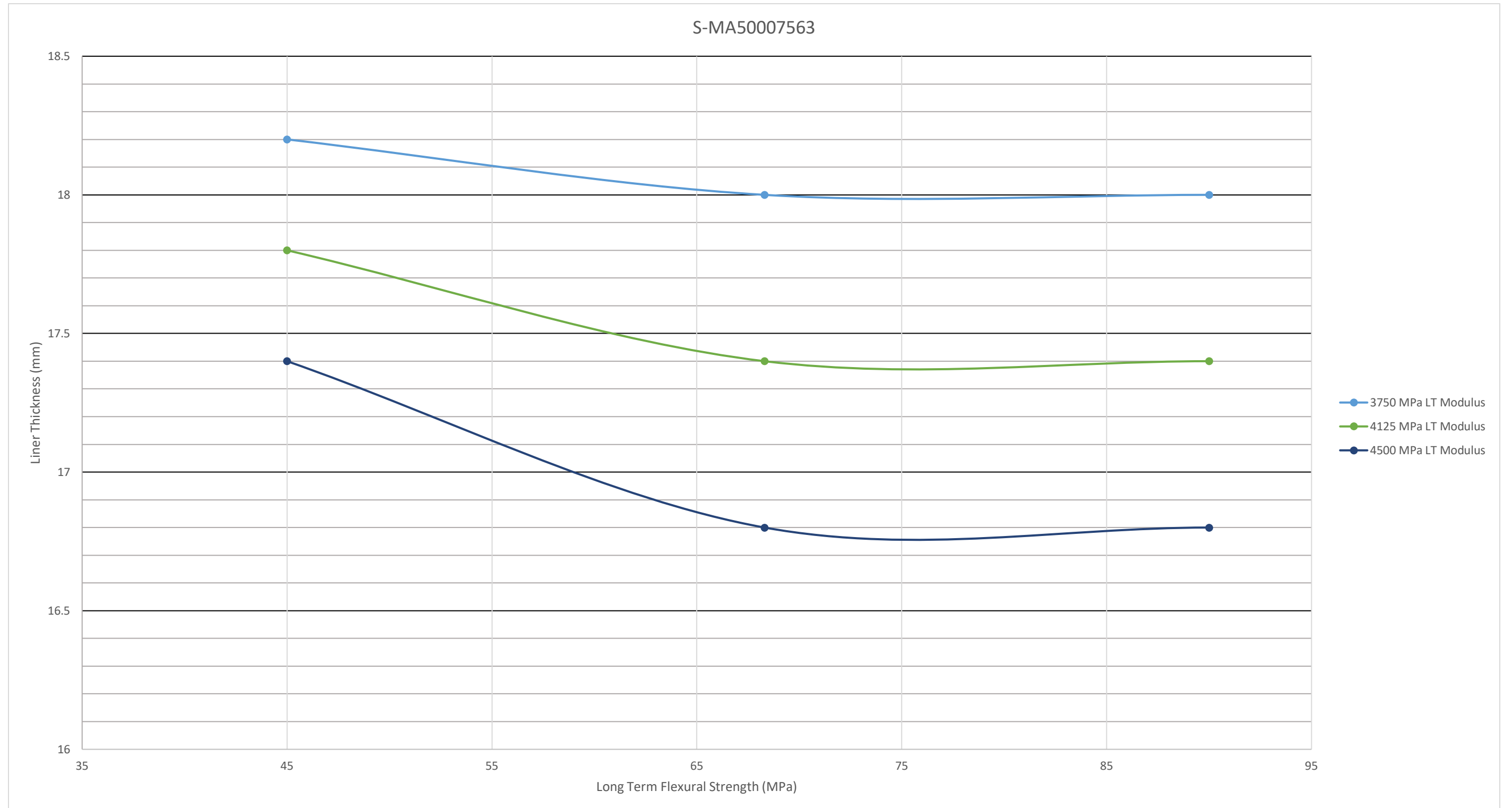


S-MA50007563 – Select applicable curve based on LT Strength and determine thickness based on LT Modulus





S-MA50007563 – Select applicable curve based on LT Modulus and determine thickness based on LT Flexural Strength



S-MA50007563 – Select applicable curve based on LT Strength and determine thickness based on LT Modulus

