

Short Stuff[®] HDPE
An alternative to
Fumed Silica for Rheology
In Epoxy & Silicone Resin Systems
September 2021

Fumed Silica Replacement

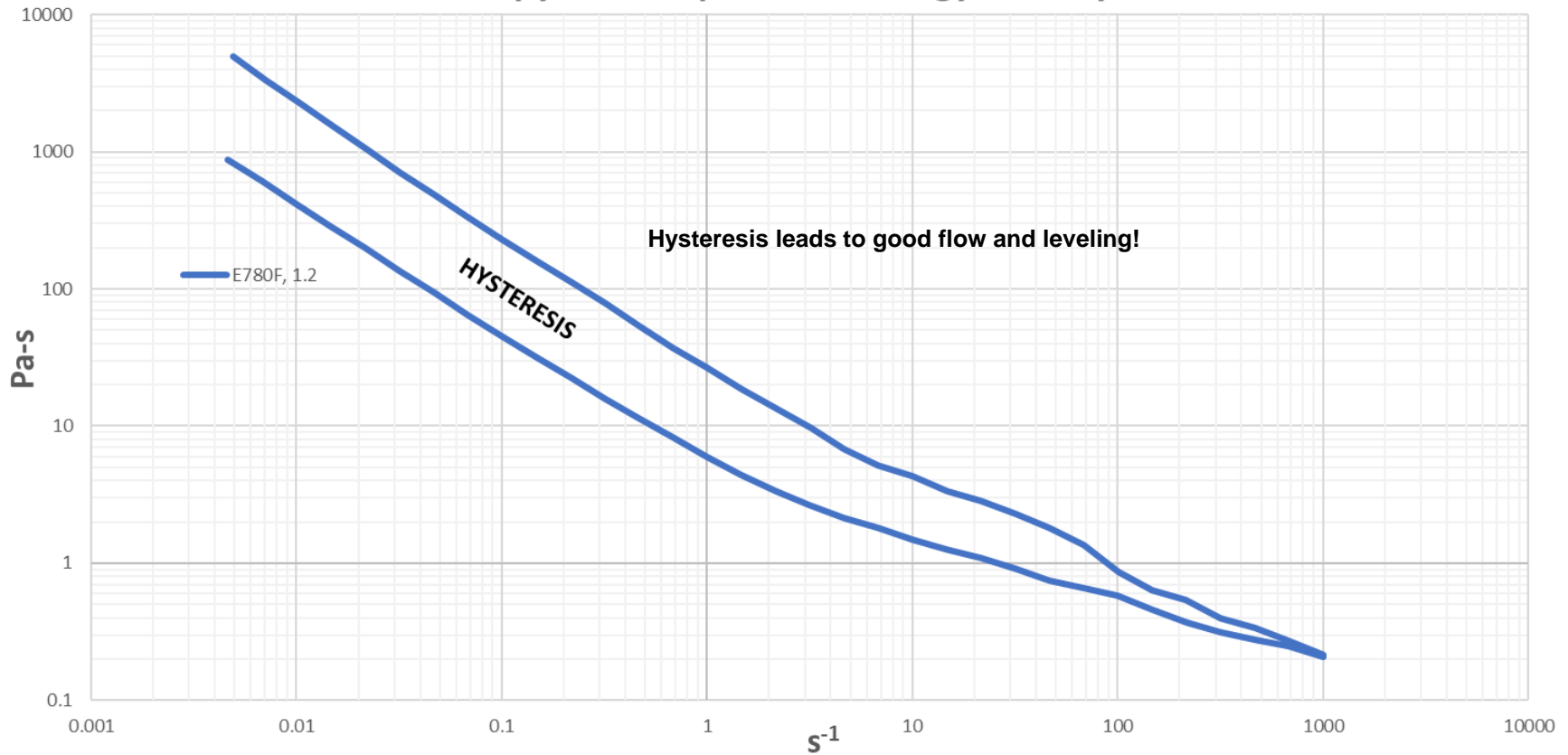
- Fumed silica brings nuisance dust issues
 - Short Stuff[®] is much easier to handle, and a shipment contains significantly more product.
- Cost
 - Short Stuff[®] is price competitive vs fumed silica, and may provide equal rheology at up to 50% less by weight in Epoxy systems.
- Consistency
 - Unlike fumed silicas, Short Stuff[®] works physically to impart rheology, so performance variation in different resins is reduced.
- Predictable Rheology
 - Short Stuff[®] provides consistent, reproducible rheology without the fluctuation often observed in Fumed Silica systems.
- Product Packaging
 - Short Stuff[®] is available in 15 lb. paper bags.

What Do I Need To Know?

- Is the customer using Hydrophobic or Hydrophilic Fumed Silica?
 - Short Stuff[®] is available in both forms. Match what they have.
- What is the Gloss/Sheen target?
 - Short Stuff[®] typically reduces the gloss/sheen.
- Is Film Clarity a Requirement?
 - Short Stuff[®] remains opaque after dispersion.
- What is the Applied Film Thickness?
 - Short Stuff[®] is limited to wet film thickness of 3+ mils to prevent texture, or visible fiber in the dry film, unless texture is desired.
- What are the Drying Conditions? Air Dry, Forced, Oven?
 - Short Stuff[®] will melt at 135C/275F

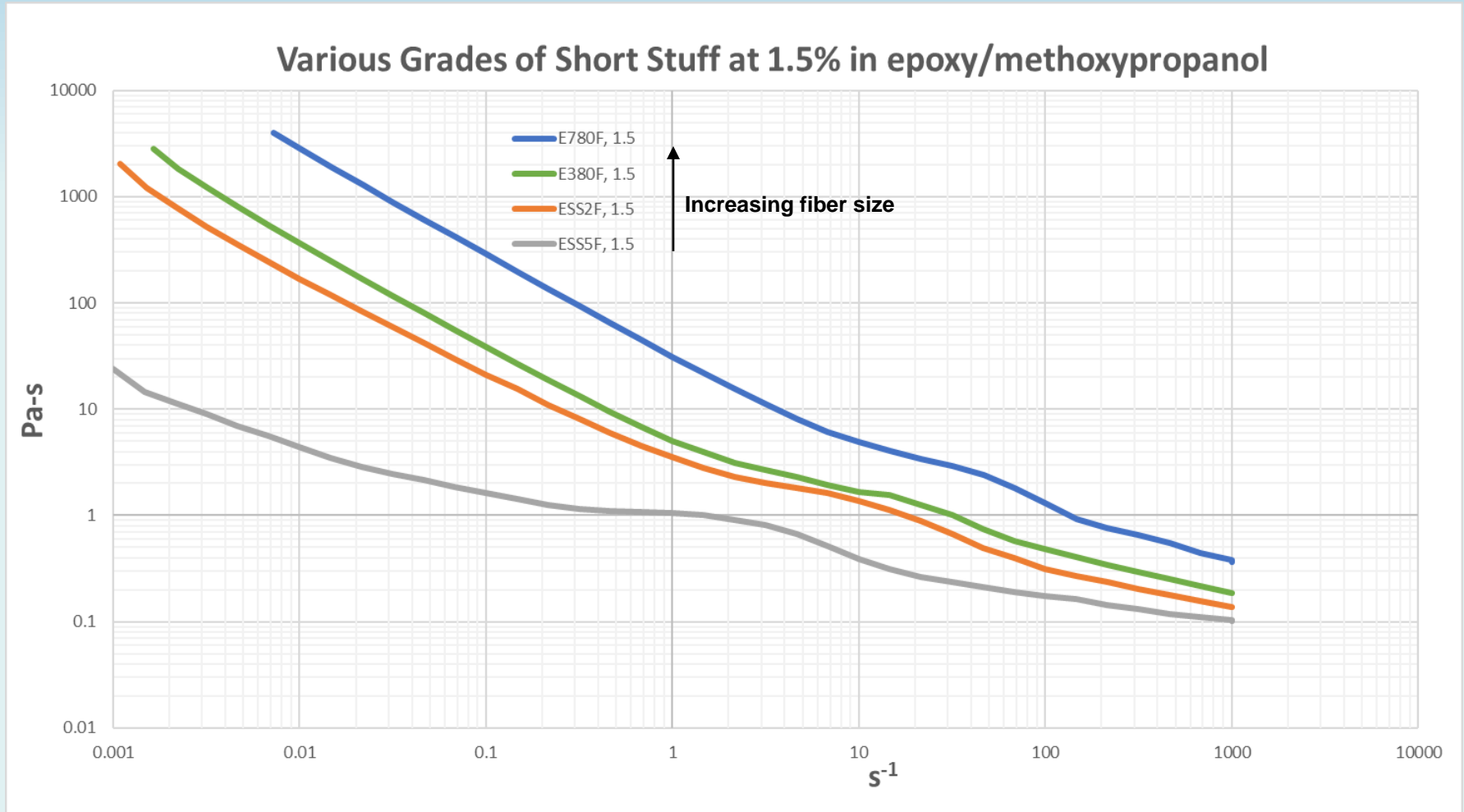
The Rheology of Short Stuff[®]

Thixotropy: Pseudoplastic Rheology with Hysteresis



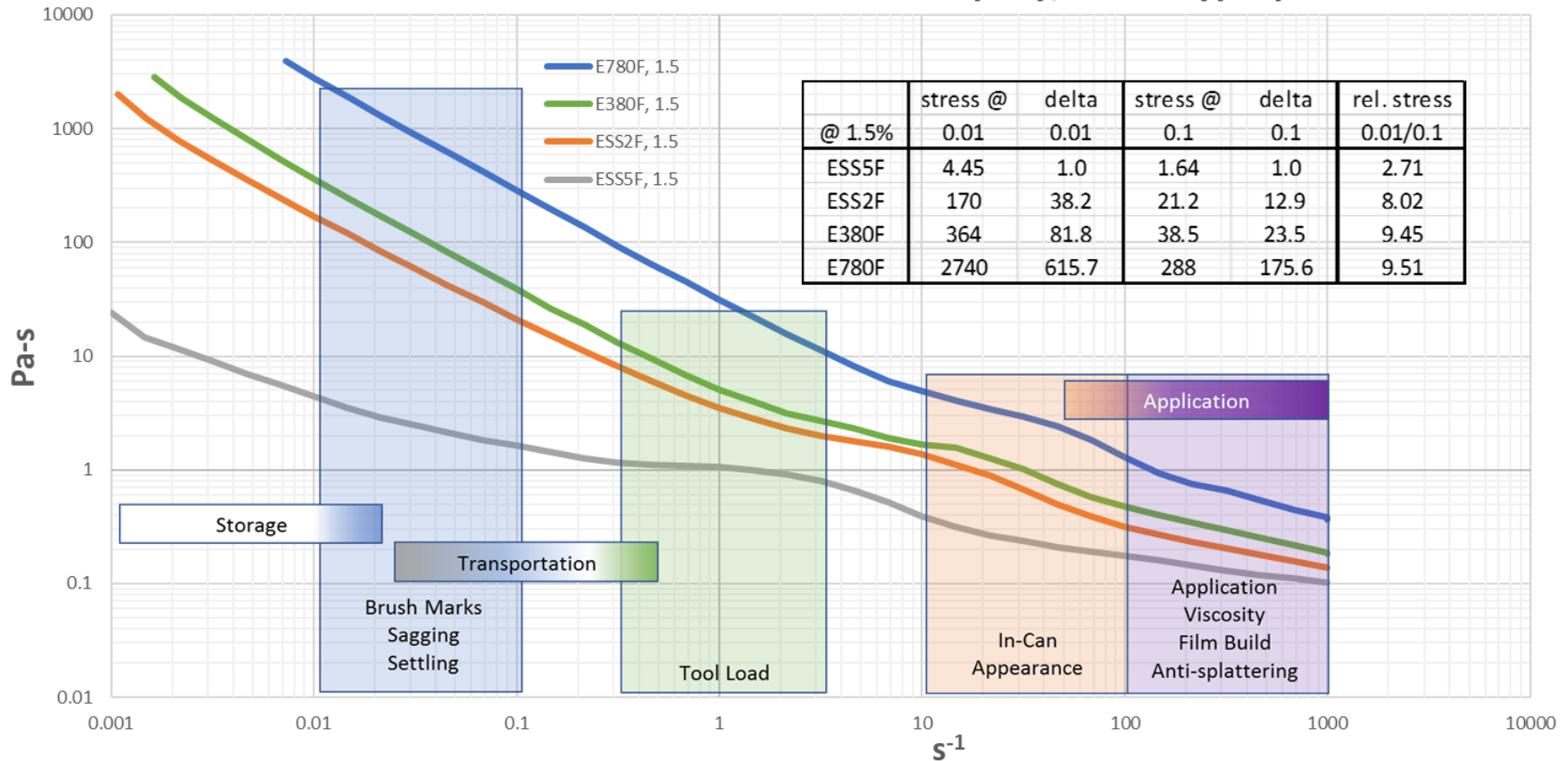
Short Stuff[®] in Epoxy

The Rheology of Short Stuff[®] in Epoxy



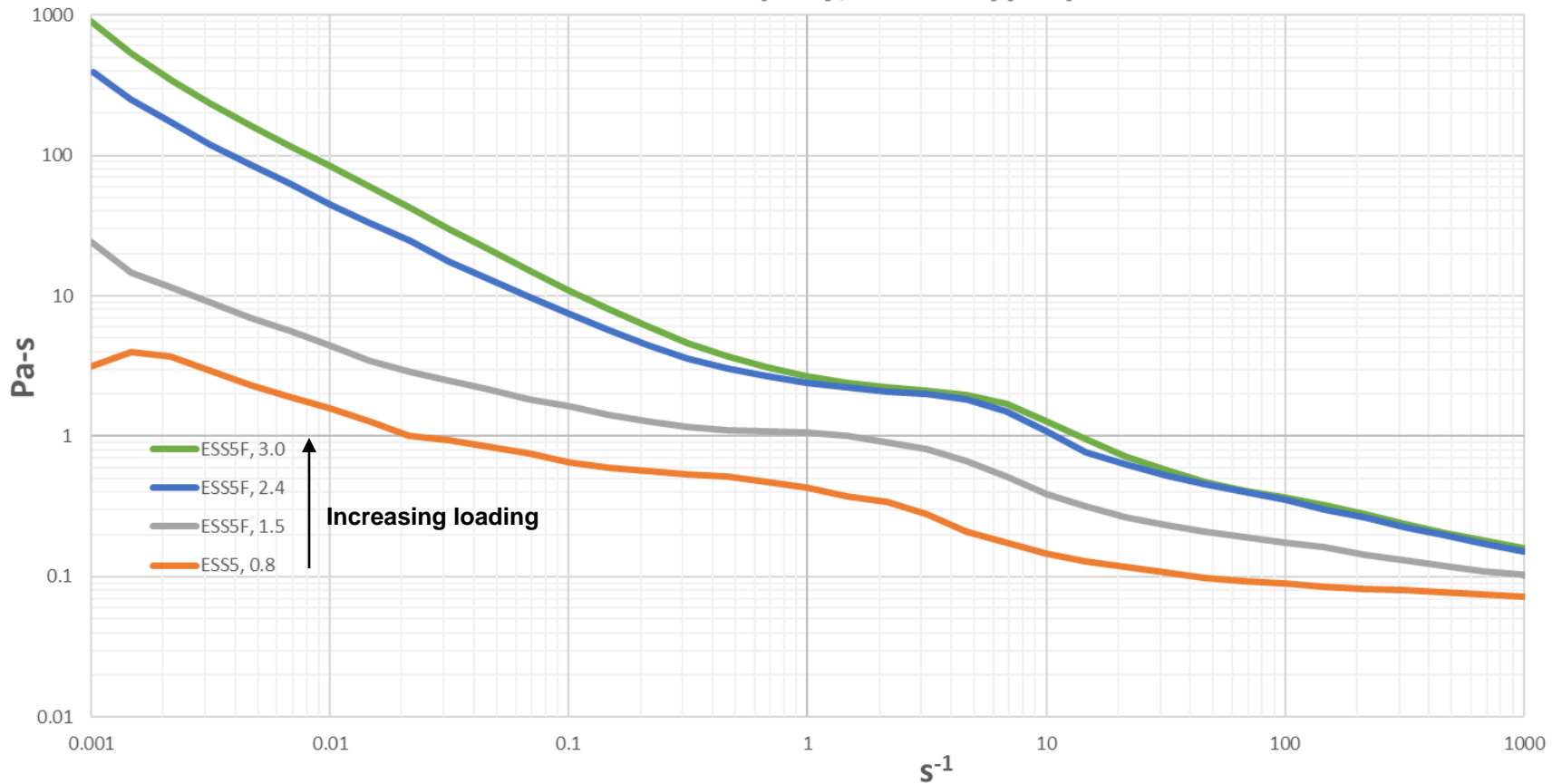
The Rheology of Short Stuff[®] in Epoxy

Various Grades of Short Stuff at 1.5% in epoxy/methoxypropanol

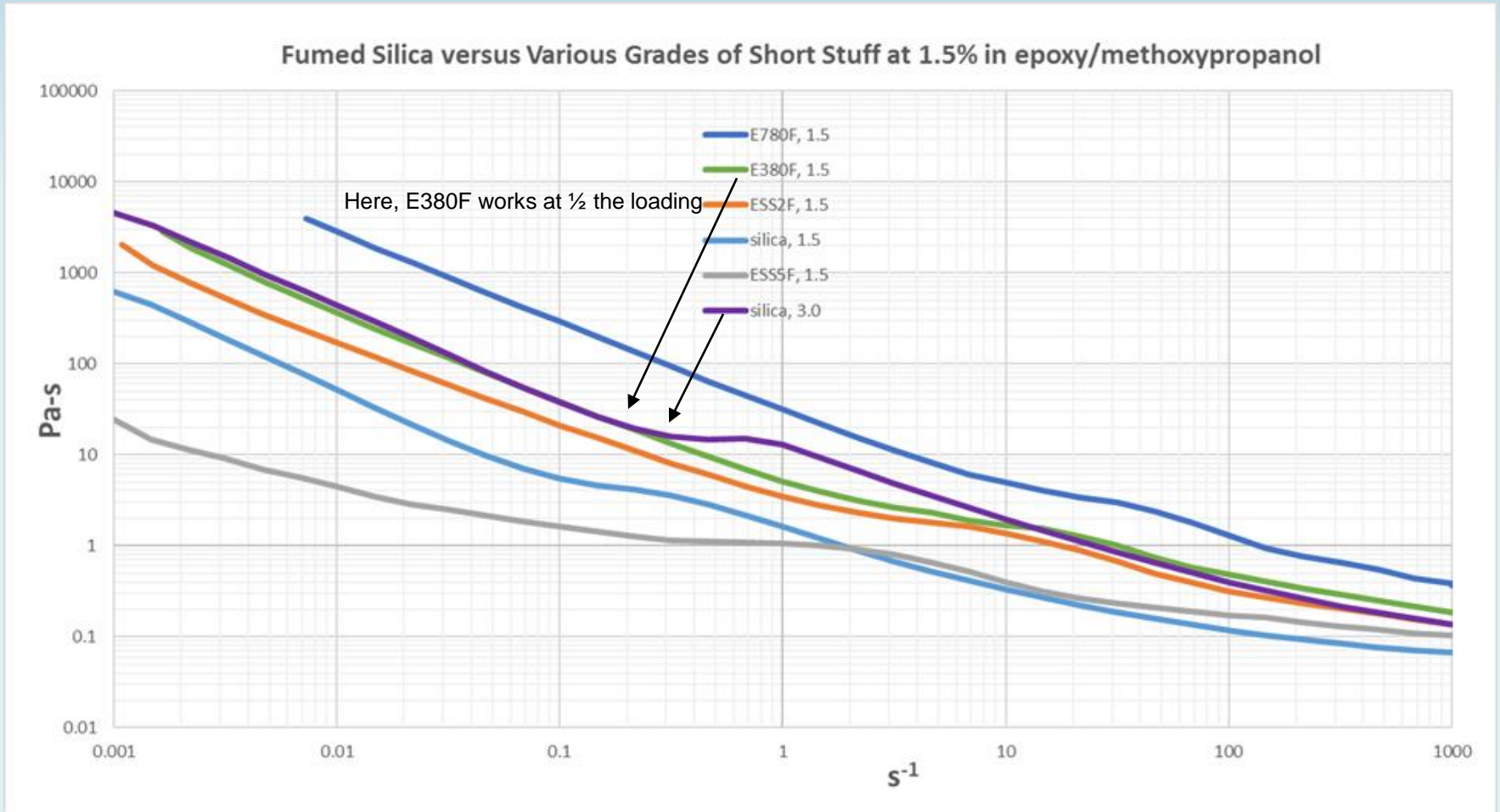


The Rheology of Short Stuff[®] in Epoxy

ESS5F in epoxy/methoxypropanol



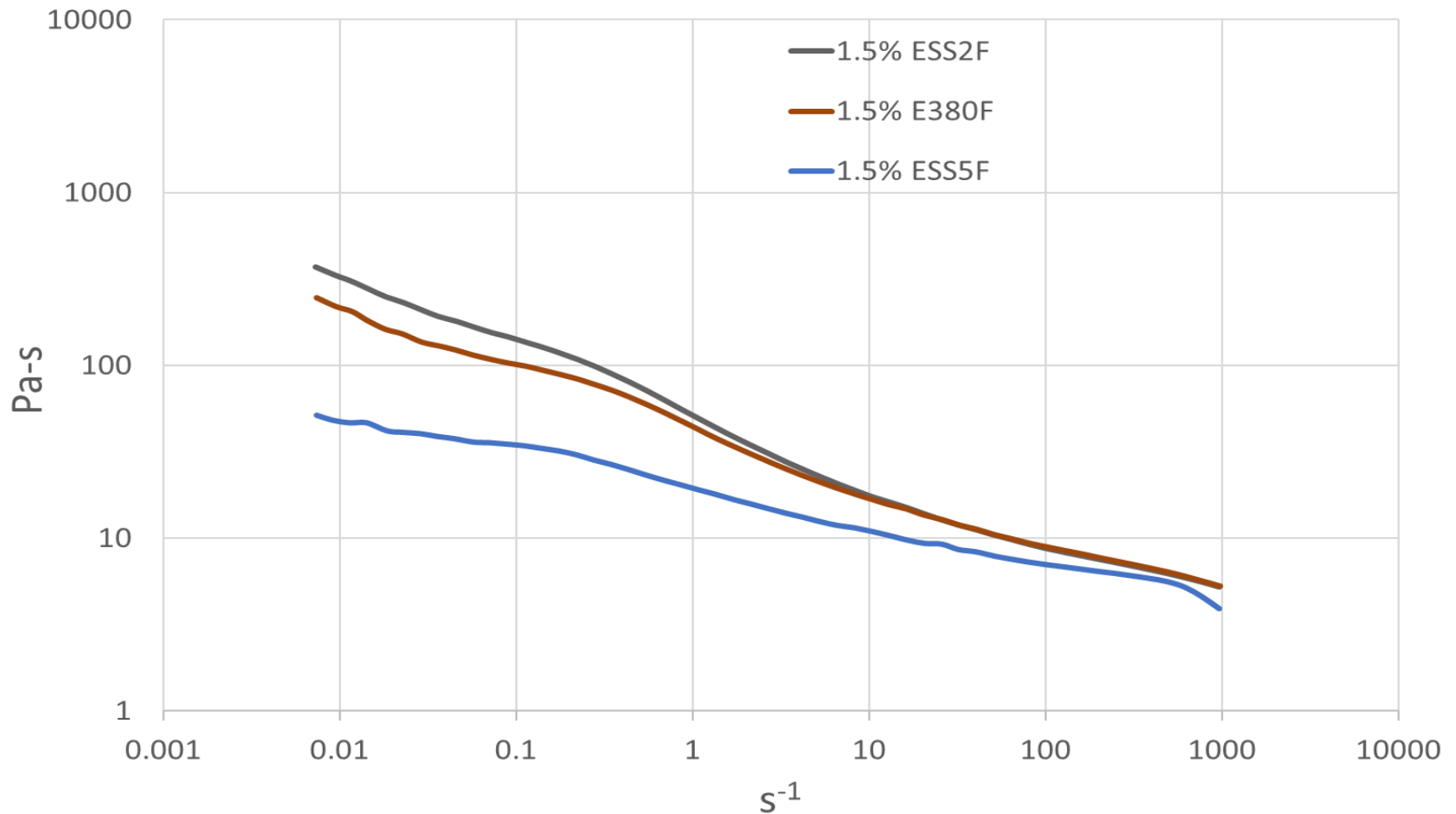
Fumed Silica Replacement in Epoxy



Short Stuff[®] in Silicone

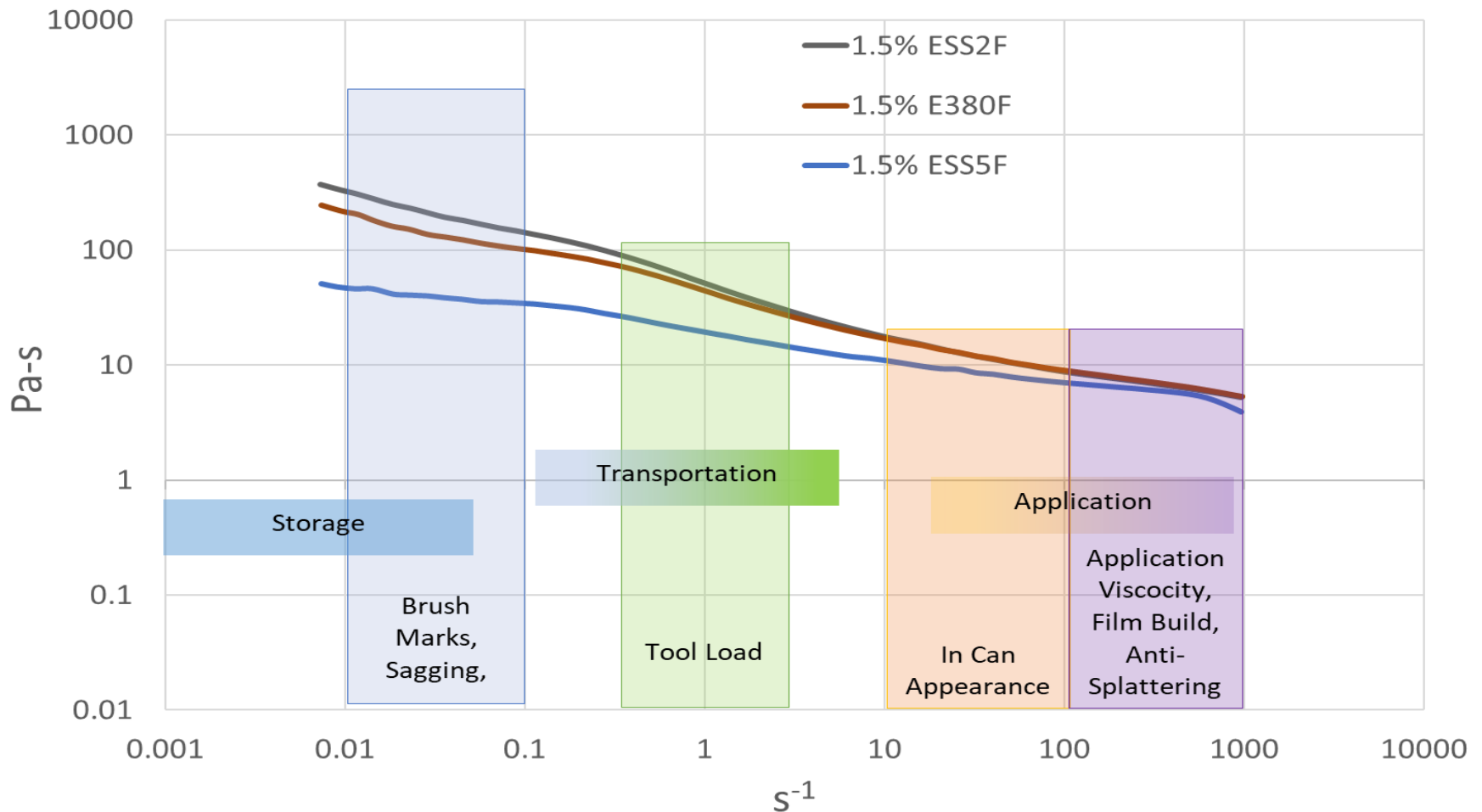
The Rheology of Short Stuff[®] in Silicone

Various Grades of Short Stuff at 1.5% in Silicone



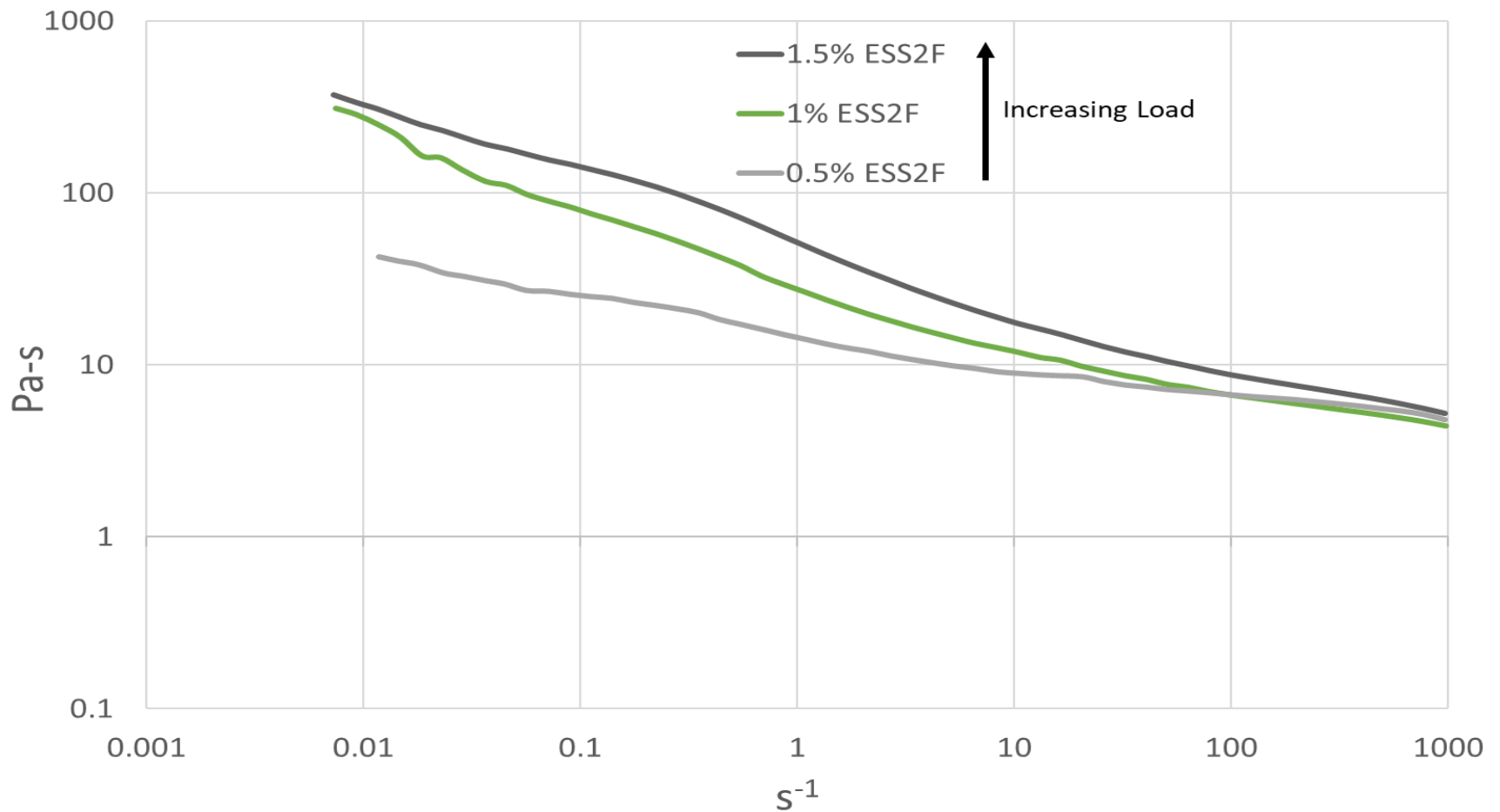
The Rheology of Short Stuff[®] in Epoxy

Various Grades of Short Stuff at 1.5% in Silicone



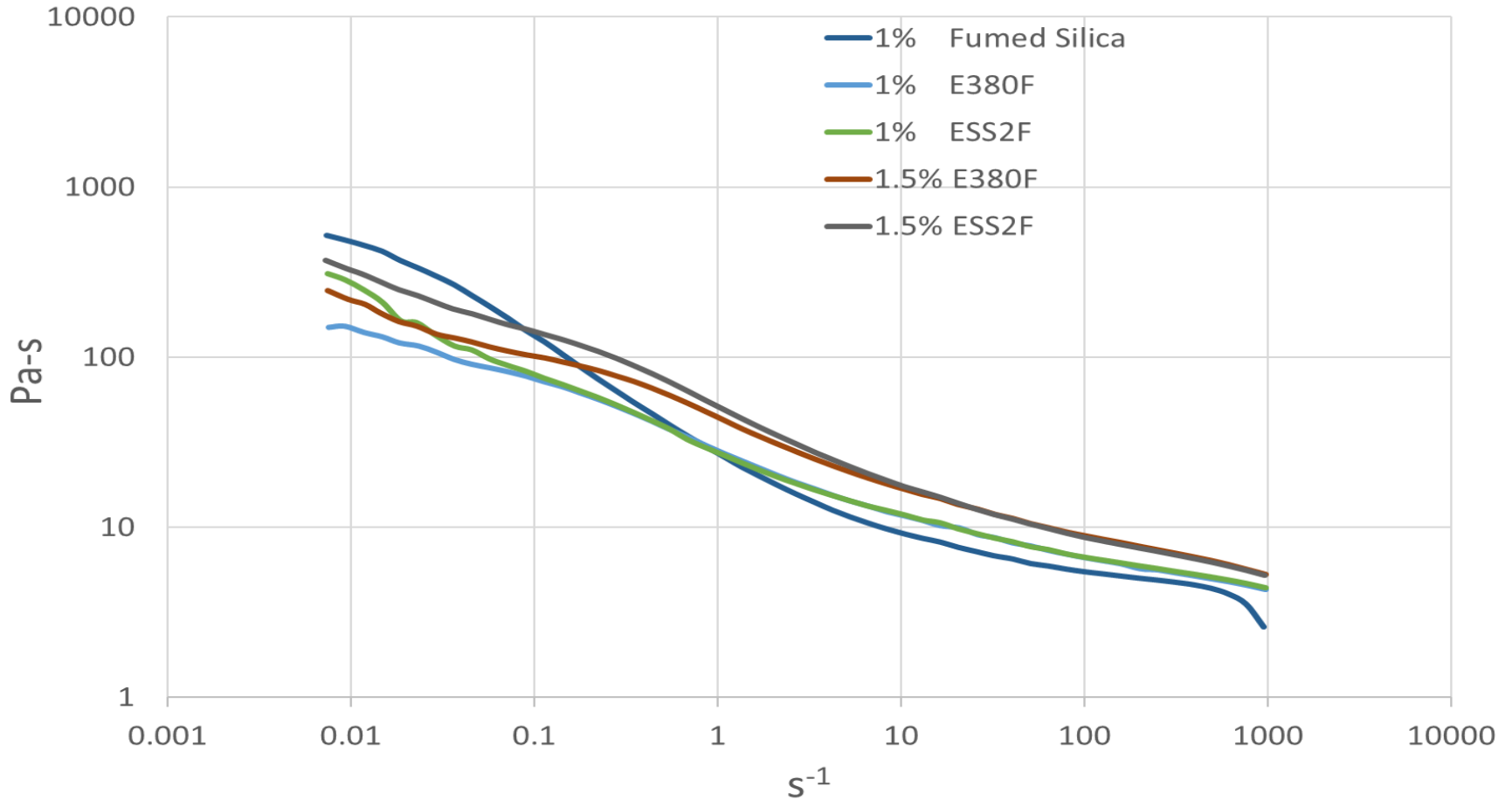
The Rheology of Short Stuff[®] in Silicone

ESS2F in Silicone



Fumed Silica Replacement in Silicone

Various Grades of Short Stuff® vs Fumed Silica in Silicone



Summary

- Short Stuff[®] is an effective alternate to Fumed Silica in many Epoxy & Silicone based systems.
 - The larger the grade the more thickening.
 - As you increase fiber loading you get more thickening.
- Short Stuff[®] is an effective alternative to fumed silica in Epoxy based systems, in some cases at up to 50% less by weight. In Silicone systems equal weight may be required.
- Short Stuff[®] performance is not compromised or influenced by system ph.
- Short Stuff[®] offers a price competitive alternative to fumed silica, and potential logistic advantages.

Thank You!

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