

$$F \propto 1/S$$



### Modern Paints

Paints are shear-thinning fluids - their apparent viscosity ( $\eta$ ) decreases as application shear increases. In the 60's, paint viscosity was 500~1000 cPs - today it is 700~3500+ due to VOC targets and enhanced properties (better hiding power, sag resistance).

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$$S \uparrow \Rightarrow \{PT \uparrow, C \uparrow, F \uparrow, T \uparrow, M \downarrow\}$$

Increasing fibre stiffness ( $S \uparrow$ ) generally improves paint transfer ( $PT \uparrow$ ) and brush control ( $C \uparrow$ ). The challenge is to simultaneously improve finish quality ( $F \uparrow$ ) and coating thickness ( $T \uparrow$ ) while minimising brush marks ( $M \downarrow$ ).



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### Paint Deposit Value (PDV) = $Q/A$

The industry often uses stroke length (SL) to measure productivity, neglecting coating thickness. While PDV, calculated from paint deposited ( $Q-g$ ) per brush load and area coated ( $A-m^2$ ), is an improvement, its effectiveness as a **true productivity measure** is still questionable.



$$\text{Real Productivity} = (CV \times A)/t$$

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CV represents the **overall value of the applied coating**, combining finish (even, streak-free application), paint appearance (vividity, sheen and gloss) as well as protective performance (dry film thickness) multiplied by area coated in  $m^2$  ( $A$ ) and time taken ( $t$ ) to coat that area.



### Redefining Productivity

For decades, paintbrushes have been compared by how far they can drag paint before reloading. Nexstar DT™ HyperStiff™ fibres redefine productivity by delivering more coating value in less time. From precision detailing and trim to flawless finishes, one brush does it all.