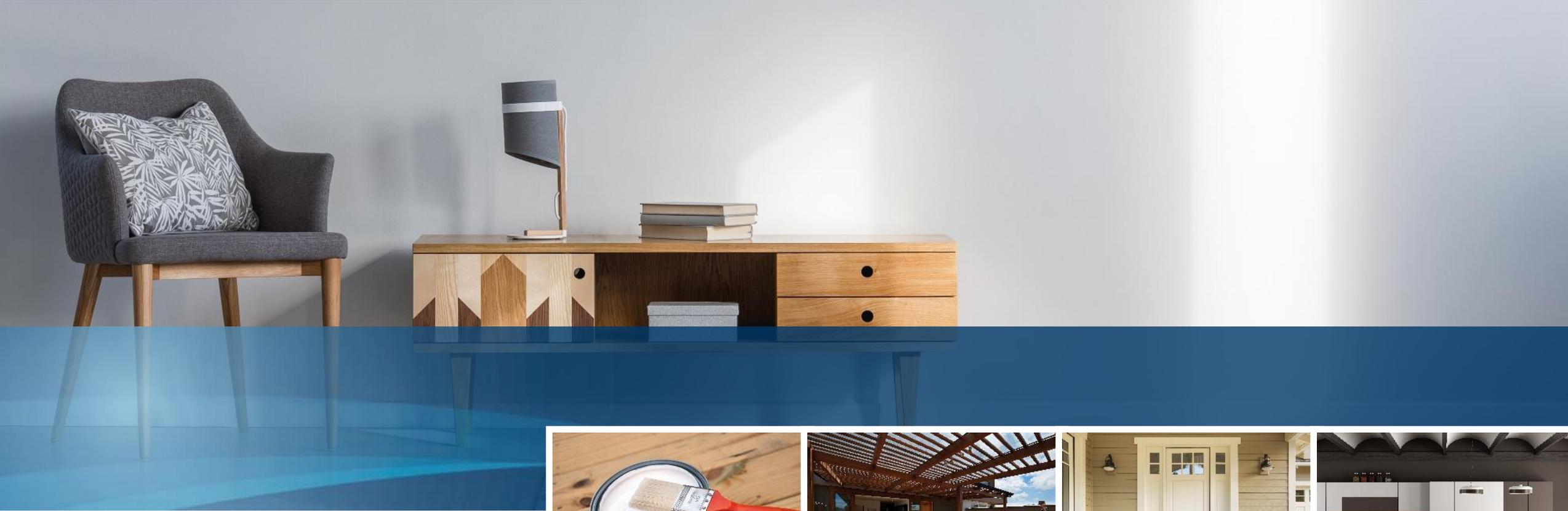


# WATER BORNE STAIN BLOCKING PRIMERS

One solution does not fit all



# BLOCKING PRIMERS : WOOD



- **Tannins**

Polyphenolic molecules which are present in Wood, Tea, Coffee, Cacao,... Dark and hardwood typically contain higher levels of tannins. Lots of tannins are water soluble, where solubility is increased with pH. Some tannins are also soluble in solvents. Tannins might induce discoloration ranging from yellow to dark brown in coatings. Inhibition of driers in alkyd paints might happen due to chelation of metal ions.

- **Knots**

Live and dead knots are located in parts of the wood where branches have been attached to the tree. Knots typically contain resinous material which can cause wood wetting and discoloration issue due to bleeding. Variation in temperature and humidity tend to aggravate these issues

# BLOCKING PRIMERS: SUBSTRATE CONTAMINATION



Substrates which need to be coated might be affected by prior use or production processes. It is common to find stains related to marker pens, nicotine, soot, grease, water,... Many substrates might be affected by changes in ambient conditions, leaks, improper venting etc. which will result in chemicals leeching through the coatings applied to it.

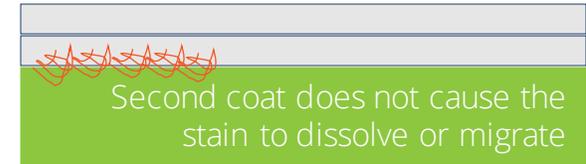
# STAIN BLOCKING MECHANISM



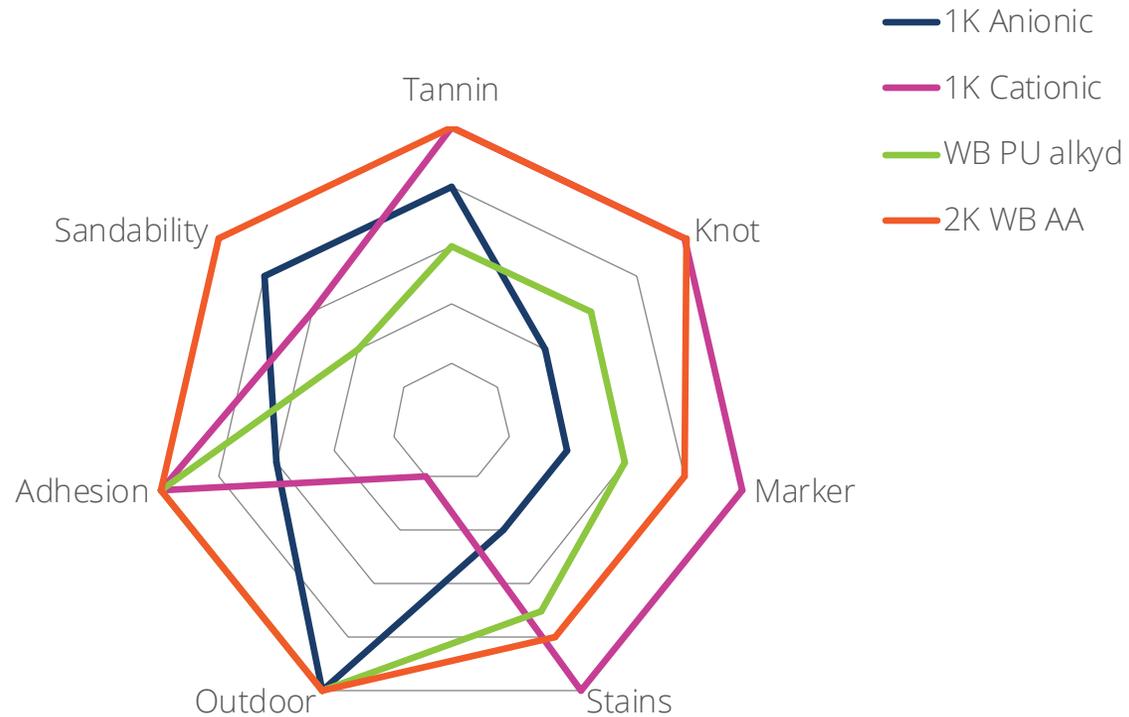
Stains can be solubilised by the primer system. pH, co-solvents, type of polymers might influence the way in which a stain might develop.

Commonly used stain blocking primers are based on solvent borne 2K isocyanate systems, but have the drawback of high VOC emission and other safety concerns related to isocyanates, organo-tin etc.

Water borne systems are based on anionic, cationic or even non-ionic technologies which can be either 1K or 2K systems. These systems can be formulated at lower VOC and are typically based on less harmful polymers.



# STAIN BLOCKING TECHNOLOGIES



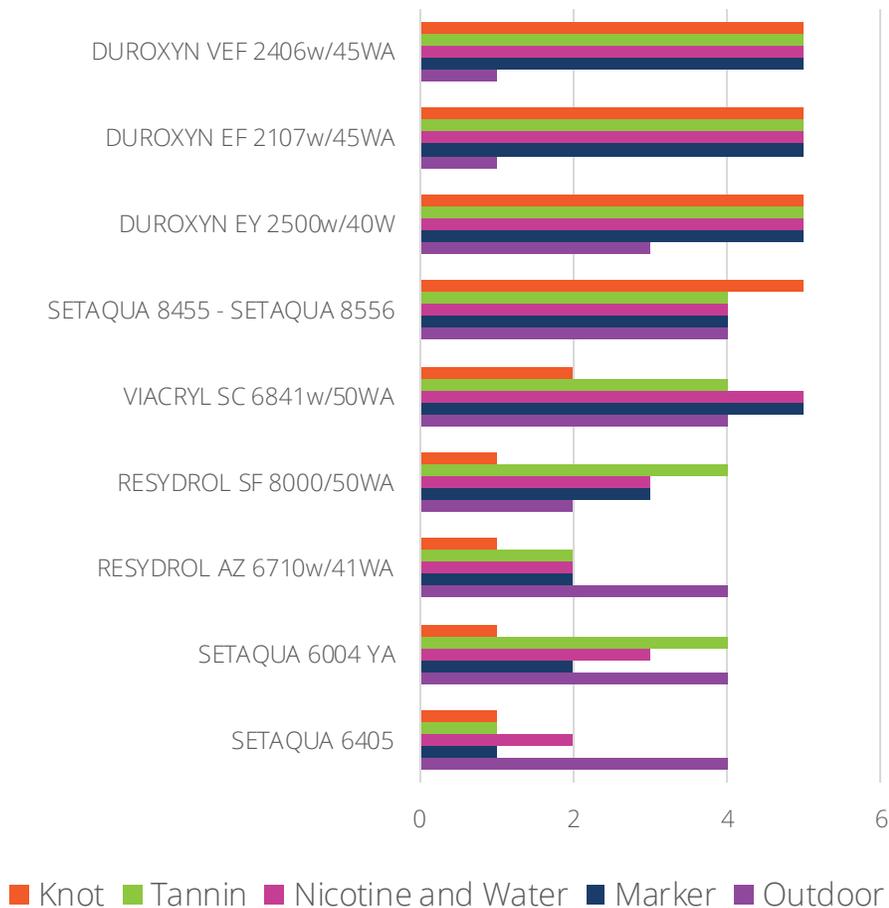
1K anionic systems typically do not have a lot of blocking power, they are economical in use and offer good compatibility with topcoats

WB PU alkyds offer slightly better blocking properties, but can be difficult to sand.

Cationic systems are the best among the best in 1K solutions for blocking primers, but often have issues in outdoor durability and compatibility.

With the 2K waterborne all acrylic system one can obtain very good blocking properties, with good sandability and outdoor durability.

# WB STAIN BLOCKING PORTFOLIO



Cationic systems like the DUROXYN® range offer best in class performance but some are limited to indoor use. That is why we developed DUROXYN EY 2500w/40WA and VIACRYL SC 6841/50WA to offer options for exterior use.

The L-QUAT system which consists of SETAQUA® 8455 and 8556 has good overall properties and can also be used for exterior. The system has good early sandability and potlife for high throughput systems in industrial applications like Joinery

WB-alkyds like RESYDROL® AZ 6710w/41WA and SETAQUA 6004 YA have balanced properties, but are slightly less sandable.

WB acrylics including the newly developed VIACRYL® SC 6841/50WA and RESYDROL® SF 8xxx platform offer superior performance in the technology range. While SETAQUA 6405 offers economy in use with a good blocking technology for a standard anionic system.

# FORMULATION SUITABILITY

Criteria	1 K Anionic	WB PU alkyds	Modified Acrylic	1 K Cationic	L-QUAT
Resin name	SETAQUA 6405	RESYDROL AZ 6710w/41WA SETAQUA 6004 YA	RESYDROL SF 8000 RESYDROL SF 8010 RESYDROL SF 8011	DUROXYN VEF 2406w/45WA DUROXYN EF 2107w/45WA VIACRYL SC 6841w/50WA	SETAQUA 8455 SETAQUA 8556
Zn-free	-	-	++	++	++
Formulation flexibility	++	+	+	-	+
Ease of use	++	++	++	-	+
Low VOC	-	++	++	++	-
Multi-adhesion	-	+	+	++	+
Recoatibility	++	++	++	-	+
Early blocking	-	-	+	-	+
Exterior use	++	++	++	DUROXYN EY 2500W/40W VIACRYL SC 6841/ 50WA	++

# CONTACT



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