



# Technical Sheet

## Surface Conditioning

Imperial Version



### Description

ARC Abrasives' Z-WEB Surface Conditioning Material (SCM), consists of a flexible, three-dimensional webbing embedded with abrasive grains. SCM is created by needling nylon filaments through a layer of backing fabric. Abrasive grains are bonded to the nylon filaments with flexible resin.

The resulting non-woven structure consistently reveals new grains and fiber as it wears while its webbing compresses and expands over surfaces. Z-WEB products deliver a consistent and efficient final finish without damage due to excess stock removal, overheating or smearing.

To ensure uniformity of performance, ARC Abrasives performs frequent quality controls on the Physical Parameters, Performance Data and Visual aspects of Z-WEB products. These controls, as well as the Identification and Traceability of the Product, provide the customer with valid guarantees of quality and consistency in performance.

### Physical Parameters

#### **Weight**

The weight of the SCM is checked by testing a disc (7"). The observed values are registered on a special form relative to the production batch, with the indication of the roll from which the sample was taken. This ensures a weight value is checked and registered for at least one disc at the beginning or end of the roll.

#### **Thickness**

Thickness of the SCM is measured avoiding potential differences caused from bending of the material or any particular arrangement of the fibers. The test method measures the thickness of 10 discs with a 4.5" diameter, stacked one on top of the other and distributing a weight of 15.4 lbs to the entire surface. Measuring a stack of discs increases both range and accuracy while applying weight prevents curvature of the discs and reduces any effect due to the interference of the nylon filaments on the non-abrasive side of the disc without compressing the material itself.

#### **Color**

The color of the SCM does not affect its performance. Resins are neutral in color and tinted with special dyes. The material itself, even if produced without dyes in a "neutral" version, has exactly the same performance. The dyes simply identify the type of product and grit size.

To ensure uniformity of color, a control is introduced with a reference sample. Due to the nature of the pigments, slight differences in color are expected.

#### **Roll Dimensions**

ARC Abrasives, Inc.® guarantees an effective 39.4". Normally, the width of the rolls is at least 40.5" trimmed from the selvage.

## Performance Data

To ensure the consistency of ARC's Z-WEB material, several tests are performed simulating a variety of applications by end users. Tests are performed in our on-site testing lab, immediately following the production of Z-WEB materials. A sample is tested at every 22 yards of material produced. The following aspects required during use are monitored closely during testing:

### **Smearing:**

The smearing test is performed using 2" or 3" discs depending on the material type. The discs are run at 12,500 RPM on a plate of stainless steel .250 thick. Speed and pressure is applied in conditions most likely to promote smearing. During testing, no amount of smearing is acceptable.

### **Performance Tests:**

We verify performance by using the most common converted product for each material type when testing.

**Scrim Back:** This material is tested using a 3-inch disc for 30 minutes on stainless steel. In addition, we perform a spin test using a 4.5" disc for 1 minute going from 0 - 12,000 RPM without ramping up.

**Low Stretch:** This material is tested using a 2" x 60" belt for 30 minutes on stainless steel.

**Z-Flex:** This material is tested using a 1/2" x 24" belt for 15 minutes on stainless steel.

### **Performance Parameters:**

**Metal Cut** - The amount of metal removed is measured and must meet minimum requirements.

**Material Loss** - The amount of material lost during grinding is measured. The amount must not be over the maximum allowance per our requirement. Material is also observed to ensure even wear and no evidence of delamination (chunking).

**Finish** - During performance testing the finish is monitored and measured. The average depth of scratch (Ra) is measured and must fall within our specified range for each material type and grade.



## Identification and Traceability of Product

To ensure rolls of Z-WEB SCM are identified properly for future reference, ARC Abrasives has established a lot traceability format. For example, **XXXX / YYY**

**XXXXX** refers to the Work Order Number

**YYY** refers to the roll number

## Physical Parameters Data

*Variation in physical parameters are typical in this type of products and common with all manufacturer. ARC's target is to produce on an average value between the minimum and maximum values which are in all cases still within the acceptable range.*

Product	GRIT COARSE - VERY FINE	WEIGHT VIA 7" DISC	THICKNESS (INCHES)	COLOR FRONT/BACKING
Low Stretch SCLS	<b>Coarse</b>	53.8 - 72.8 g	.181 - .244	brown / brown
	<b>Medium</b>	48.5 - 65.7 g	.126 - .169	dark red / dark red
	<b>Very Fine</b>	37.1 - 50.3 g	.126 - .169	blue / blue
Scrim Back SCSB	<b>Coarse</b>	55.9 - 75.7 g	.201 - .272	brown / brown
	<b>Medium</b>	51.6 - 69.8 g	.181 - .244	dark red / dark red
	<b>Very Fine</b>	34.8 - 47.1 g	.181 - .244	blue / blue
Z-Flex ZWFX	<b>Coarse</b>	44.3 - 60.0 g	.126 - .173	brown / purple
	<b>Medium</b>	44.3 - 60.0 g	.122 - .161	dark red / purple
	<b>Very Fine</b>	30.6 - 41.4 g	.102 - .138	blue / purple

