

## 1 Scope

This specification defines requirements for self adhesives and stickers material intended for aeronautical purposes in the manufacture and maintenance of ULDs.

## 2 Related specifications and requirements

- For minimum recommended requirements of decal material See table 1.
- For allowable materials on substrates, see Table 2.
- Oracal 1680 may be used as alternative to Fascal 400 for Aluminum even if Fascal 400 is specified on drawings, except when material in drawing is defined as transparent, in such case must be consulted before substituting the material.

## 3 Construction

(refer to Approved data sheets)

## 4 Finish

In accordance with p/o and agreements

## 5 Recommended Minimum Requirements

The requirements listed below are absolute minimum requirements, actual performance of the material on the substrates shall be documented through datasheet and test reports when necessary.

**Table 1 - Material recommended minimum requirements**

PROPERTIES	UNIT	MINIMUM REQUIREMENT	TEST METHOD
<b>Decal material<sup>1</sup></b>	-	Vinyl	
<b>Decal material Thickness<sup>2</sup></b>	Microns (μ) (+/- 20%)	90	-
<b>Adhesive type<sup>3</sup></b>	-	Acrylic or Rubber	
<b>Adhesive thickness</b>	Microns (μ)	≥ 50	
<b>Adhesive Class</b>	Temporary/permanent	Permanent	
<b>Service Temperature</b>	°C	-40 °C to + 70 °C	-
<b>Application temperature</b>	°C	≥ 8 °C	-
<b>Shelf Life<sup>4</sup></b>	yrs	≥ 1	-
<b>Outdoor Durability<sup>5</sup></b>	yrs	≥ 5	
<b>Peel Strength Aluminium</b>	N/25mm	≥ 20	FINAT FTM 1
<b>Peel Strength Plastics<sup>6</sup></b>	N/25mm	≥ 20	FINAT FTM 1

<sup>1</sup> should be a cast Vinyl

<sup>2</sup> without paper or adhesive

<sup>3</sup> solvent based for LSE plastic materials, incl. PP, PET, PC and PU

<sup>4</sup> @20 °C, 50% RH

<sup>5</sup> Outdoor, vertical exposure, typical central European climate

<sup>6</sup> Benchmark for plastic Materials: 29N/25cm (UltraLite, V-473 100 micron)

## 6 Approved Materials Matrix

Table 2 - Acceptable Decal Adhesive to base material Matrix

Adhesive type	Applicable material surfaces					Colour
	Al	Twt	TwtU	Ult	Poly	
Avery 400	✓				✓	gloss white/transparent
Oracal 1680	✓	✓			✓	gloss white
exV-473	✓	✓	✓	✓	✓	gloss white
PL1E	✓	✓			✓	gloss white
PL4E	✓	✓			✓	gloss white
PL37	✓	✓			✓	transparent
SVLWA100#E (W)	✓	✓			✓	gloss white
SVLWA80#E (W)	✓	✓	✓			gloss white

Al: Aluminium, Twt: TwinLite, TwtU:TwinLiteU, Ult:Ultralite, Poly:Polycarbonate

For any other specification or properties, refer to supplier data sheet.

## 7 Material qualification requirements

Supplier quality demands:

Supplier must confirm by using an appropriate certificate (Material Certificate/C of C) that the supplied material meets the requirements in Material Specification with regards to both material properties and the production processes used. This is required for conformity with applicable test(s) performed by . Applicable test(s) shall be referred to in the appropriate suppliers certificate (Material Certificate/C of C):

### Burn rate test

The quantity used of this material is so small that it does not contribute significantly to any fire, so it can be considered "small part", and therefore exempt from the specified burn rate requirement.

### Weathering Tests

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Either an outdoor weather test for minimum 3 months or accelerated weathering test shall be done to assess the long term peel adhesion quality of the material to substrates.

- MT-32825 Decal test on TwinLiteU material(Weather test )
- MT-802134 Decal test on UltraLite material(Weather test )
- MT-803685 Accelerated weather test – China Supplier decals (SGS China)

#### **Peel test**

Peel test according to FINAT FTM 1 shall be performed on materials.

- MT-803177 Decal Peel tests on
- MT-803245 Peel test on TwinLiteU (Supplier)

## **8 Identification, packaging and storage**

In accordance with p/o, in such a way that it is not exposed to water, indoors to prevent moisture due to condensation and away from direct sunlight.

#### **Shelf life**

Required minimum shelf life: 12 months