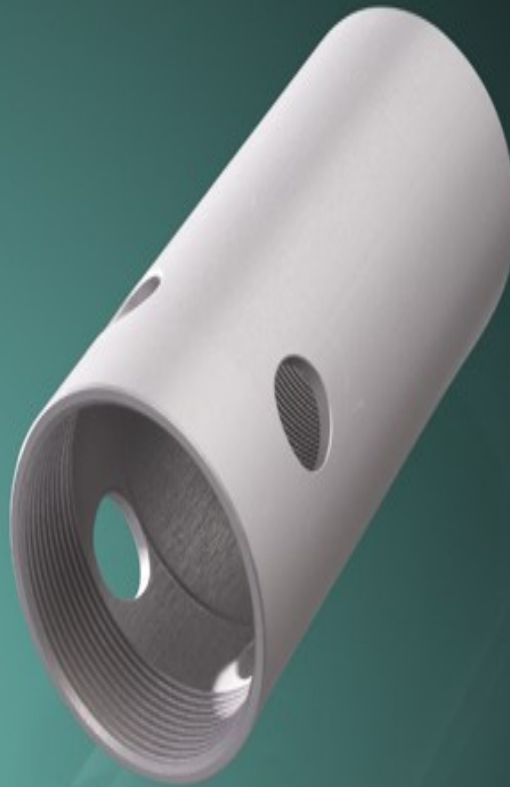


ENGINEERING DATA-SHEET

TUFRAM[®] C22



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TUFRAM® C22

Process Description

During the multiple steps of the TUFRAM process, there are a number of variables that can be controlled to produce different surface enhancement characteristics. Through experience and research, the exact control required to produce the desired results of a specific coating type has been refined. There are many different types of coatings within the TUFRAM family of coatings. Each one has unique characteristics to meet application needs or can be modified to achieve special performance requirements.

TUFRAM® C22 meets the MIL-8325-Type III.

Engineering Data

Type of baselayer	: Hard anodizing
Type of process	: Dipping
Type of coating system	: 1 coat system (excluding baselayer)
Practice average thickness	: 25 ~ 50 µm
Colour	: Yellow
Tempering	: No
Operating temperature (peak) *5)	: 260°C
Operating temperature (continuous)*5)	: 200°C
Maximum hardness	: 360 ± 20 HV
Average polar contact angle *1) (Water)	: 63°
Average non-polar contact angle *1) (Diiodomethane)	: 41°
Dynamic COF *2)	: 0,71
Wear Resistance *3)	: 3,0 ± 1,1 mg
Breakdown voltage	: 914 V
Corrosion Resistance (valuation grad Rp10) *4)	: > 144 hours
Corrosion Resistance (valuation grad Rp8) *4)	: > 1.000 hours
Special characteristics	: Seawater resistance

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Test parameters and Explanation

To get a truly authentic picture all samples were coated under production conditions.

- *1) = Measure by the DataPhysics OCAH 200 on water (polar) and Diiodomethane (non-polar). The higher the value, the better the properties.
- *2) = Values determined after 10.000 turns, a force of 5N and at a speed of 10 cm per second. As friction partner a 100Cr6 steel ball was used.
- *3) = Test according to Taber-Abraser with a CS10 wheel. Values determines after 7 runs of 1.000 turns at a speed of 72 turns per minute, a frictional force of 10N, at a temperature of 25-26°C and a humidity between 37-49%.
- *4) = Saltspraytest according to DIN EN ISO 9227

Valuation Grade:

Corrosion Surface in %	Valuation Grade (Rp)
No corrosions	10
$0 < A \leq 0,1$	9
$0,1 < A \leq 0,25$	8
$0,25 < A \leq 0,5$	7
$0,5 < A \leq 1$	6
$1 < A \leq 2,5$	5
$2,5 < A \leq 5$	4
$5 < A \leq 10$	3
$10 < A \leq 25$	2
$25 < A \leq 50$	1
$50 < A$	0

- *5) = Temperature resistance of the Topcoat, the tensile strength of the Aluminum will decrease

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Layer Property Rating (LPR)

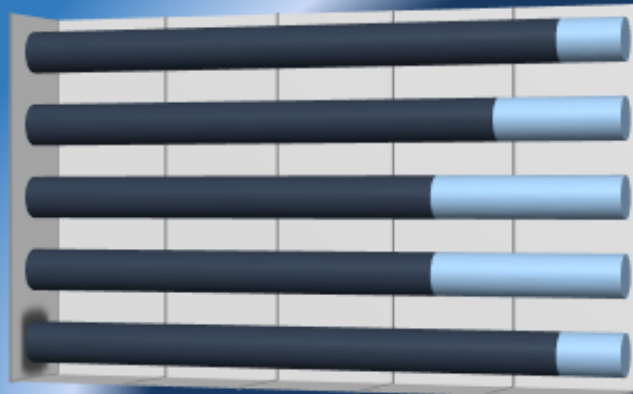
Corrosion Resistance

Lubricity

Non Stick (polar)

Wear Resistance

Breakdown Voltage



■ LPR (ouf of 10)

LPR comparison of the TUFRAM variants

Corrosion Resistance

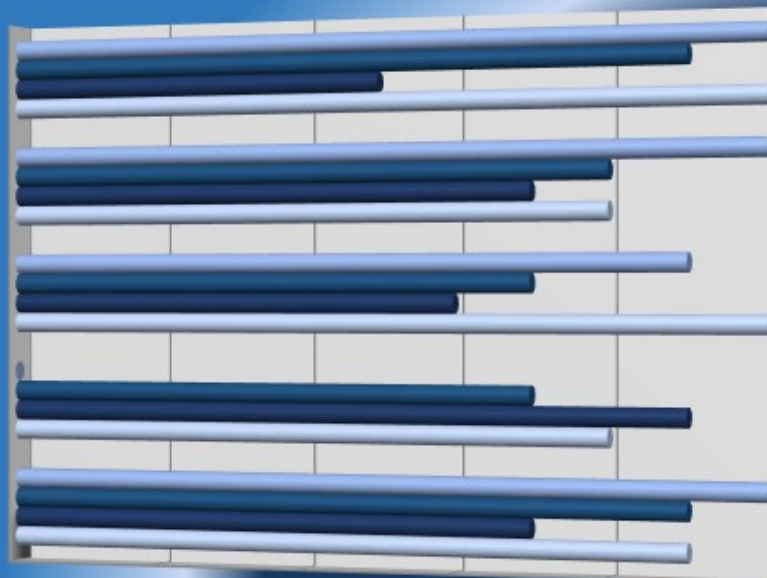
Lubricity

Non Stick (polar)

Wear Resistance

Breakdown Voltage

- R66F
- C22
- HO
- H2



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Compliances:

FDA/USDA

Not applicable

EC Regulations

Not applicable

AHC Benelux B.V.

www.ahcbenelux.nl

info.eindhoven@ahcbenelux.nl

info.venlo@ahcbenelux.nl

+31 - 40 - 250 76 07

+31 - 77 - 389 89 77

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