NORD COMPOSITES

From Plug to Mould

15 Step Manufacturing Sequence

formulator of resins

gel coats – bonding pastes – pigment pastes

NORD COMPOSITES

This is a document with 15 steps, details the manufacturing sequence for a composite mould, from basic plug manufacture to the final de-moulded product.

Nord Composites has developed a range of products for plugs, primer resin (**Norester 854**) for polystyrene foam and **NCL 804 PRVB Grey** for CNC machining. These allow the production of plugs from polystyrene or polyurethane foam at lower cost with considerable time saving.

As well as this, a range of finishing products, **Nord Appret 230** and **Nord Laque 210**, which also give time savings in application to produce a high gloss surface finish.

The manufacture is exclusively carried out using products from **NORD COMPOSITES** and with tools and equipment from **CMS.**

NORD COMPOSITES

1a

CNC (Computer Numeric Control) machining of the **Polyurethane** foam

Machine the foam to between -8 to -12mm of the final form

NORD COMPOSITES

1b

CNC (Computer Numeric Control) machining of the **Polystyrene** foam

Machine the foam to between -8 to -12mm of the final form

NORD COMPOSITES

2

Application of the Resin Norester 854 to the **Polystyrene** plug

Apply 0.8-1mm of resin to the polystyrene [density >25kg/m2] with a brush or roller

Laminate 2 layers powder bound mat, 300gm/m2 with the resin, roll between layers and make the laminate 10-15cm wider than the plug dimensions. Allow to cure at ambient temperature for 24 hrs before applying the NCL 804PVRB Grey

NORD COMPOSITES

Application of **NCL 804PVRB Grey** on to the plug

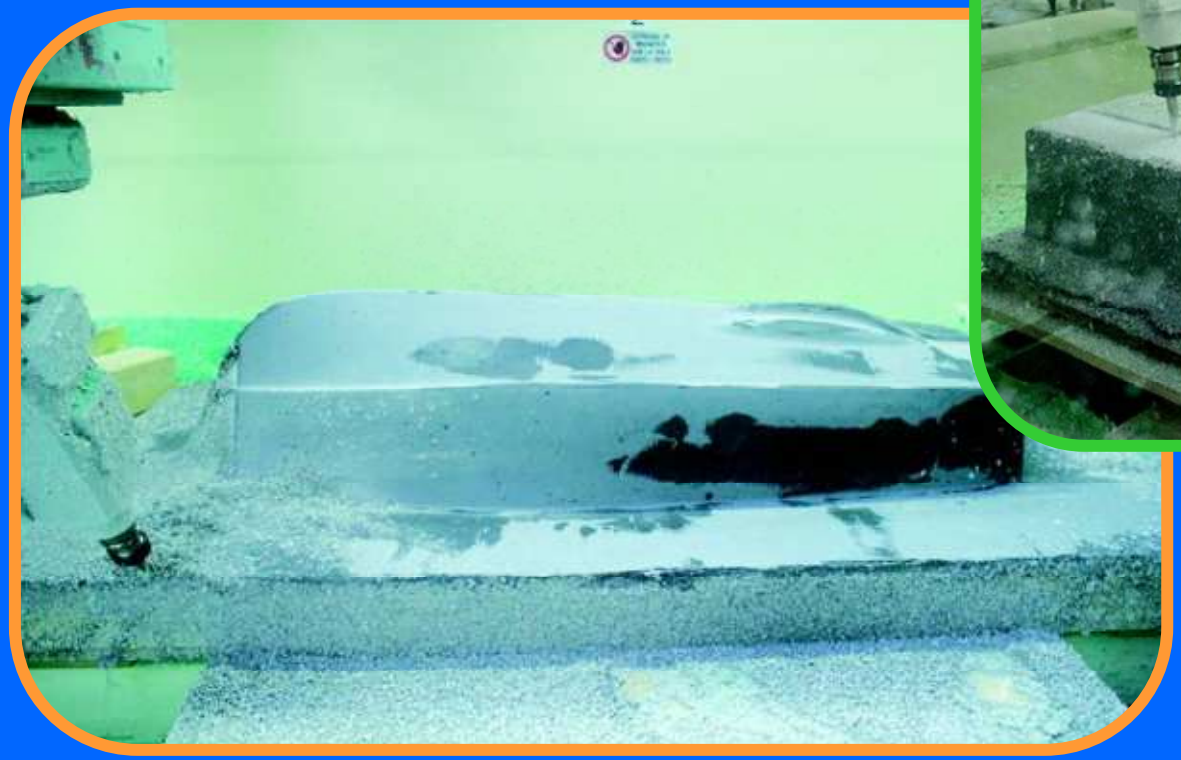
Spray with a Glas Craft machine LVG/HVSS (pump ratio 20:1), use several thin passes to obtain a thickness of 5-6mm.

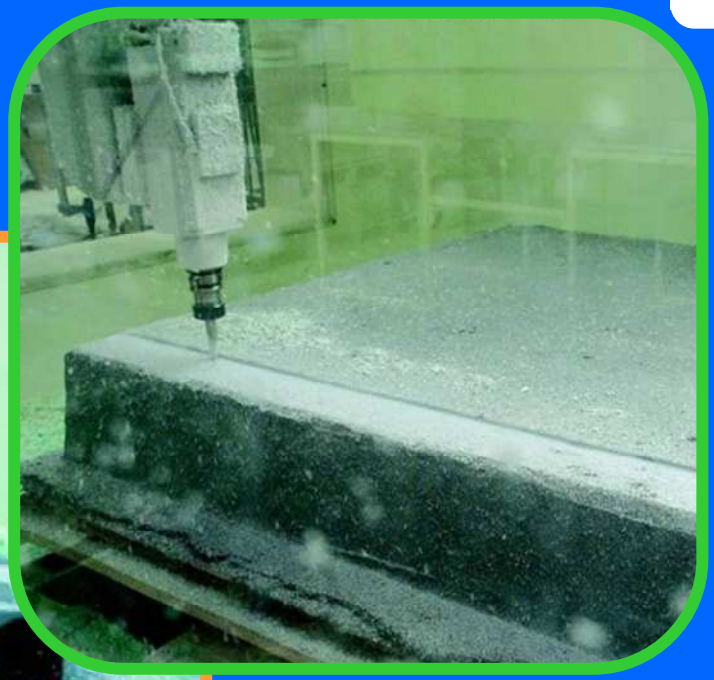
To obtain the final dimension for machining it is necessary to:

A – 8mm CNC machining : 2 layers

B – 12mm CNC machining : 3 layers

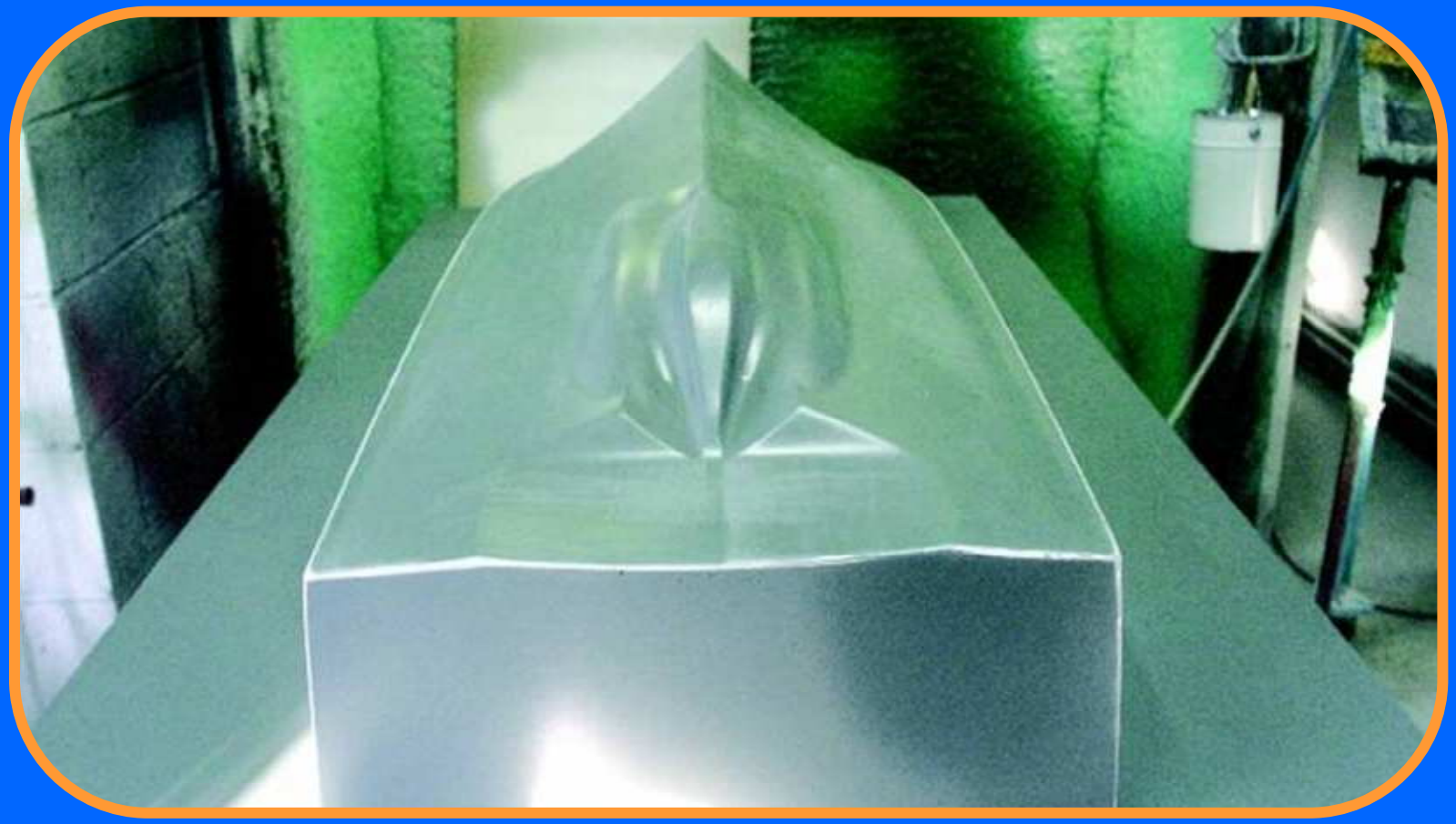
NORD COMPOSITES





CNC machining of the **NCL 804PVRB Grey**

NORD COMPOSITES



NCL 804PVRB Grey after machining

NORD COMPOSITES

5&6

Application of the **Nord Appret 230**

Apply 450 – 600 microns in several fine passes

Sanding of the **Nord Appret 230**

Sand with a dry paper

NORD COMPOSITES

Application of **Nord Laque 210**

Spray with several fine layers in order to obtain the best finish

NORD COMPOSITES

Sanding the Laque

Sand with different grades of wet & dry paper

Polishing the Laque

With a polishing machine and different grades of polishing pastes, until an ultra high gloss shine is produced

NORD COMPOSITES

9&10a

Application of release agent

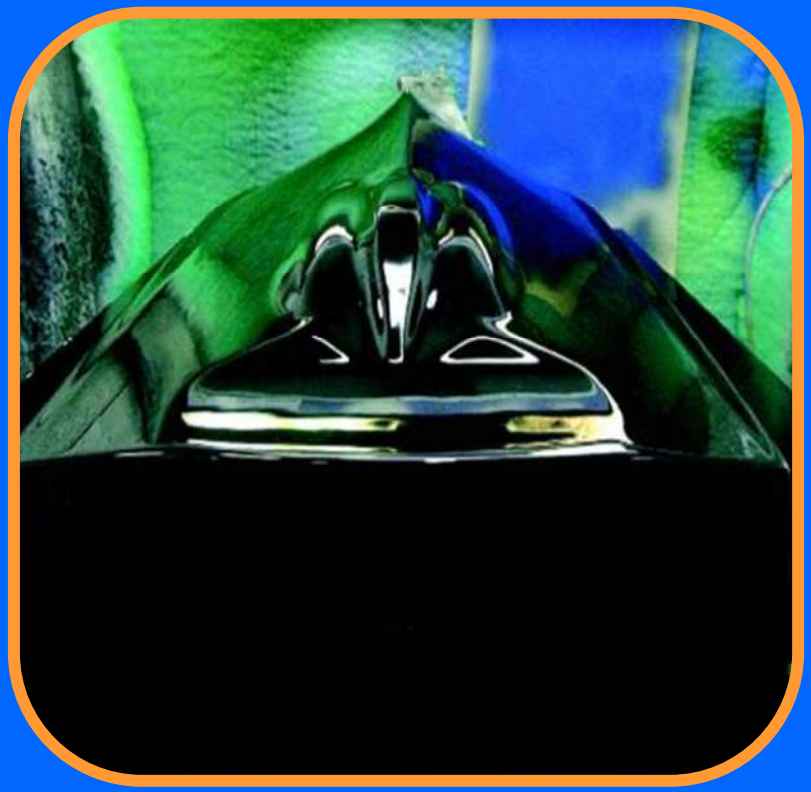
7 – 8 layers of wax

Application of spray gel coat **GC 207**

Apply 700 to 800 micron layers,
wet on wet in 4 or 5 passes

NORD COMPOSITES

10b



Application of brush gel coat GC 2**06**

Apply 700 to 800 micron layers in 2 passes

NORD COMPOSITES

Application of resin **Norester 842**

Apply 1x100gm/m2 powder bound mat and 2x225gm/m2 powder bound mat

NORD COMPOSITES

Application of tooling resin **RM 2550**

Apply by hand lay up or spray gun using 2 rovings

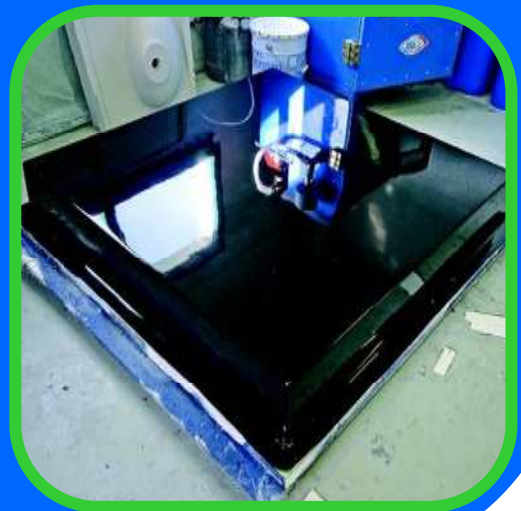
NORD COMPOSITES

Rolling

NORD COMPOSITES

Adding wooden reinforcing ribs

NORD COMPOSITES



Demoulding

NORD COMPOSITES

ZA route d 'Amiens, 80890 CONDE FOLIE, FRANCE
Tel +33 (0)3 22 31 57 57 Fax +33 (0)3 22 31 57 57

For company information and a list of other Nord products see our web site: nord-composites.com

For product data sheets, MSDS or technical service, contact us on e-mail: nord-composites@wanadoo.fr