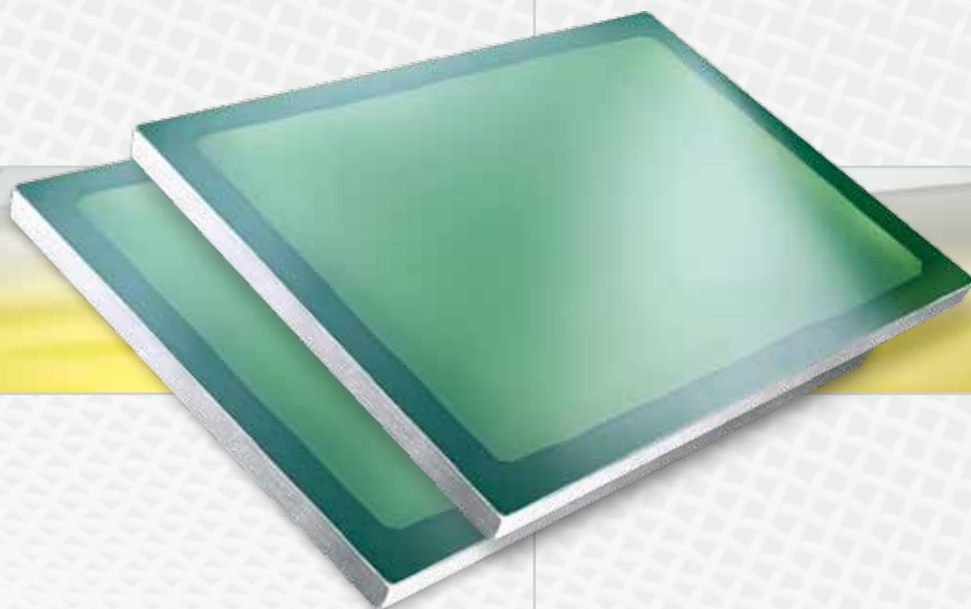


swiss
mesh
technology



Precoated screen printing
mesh for industrial use



Printing Solutions
SEFAR® PreCoated Fabrics

S E F A R
■ ■ ■ ■



SEFAR® PreCoated Fabrics

The most revolutionary innovation
since screen printing was developed

At last, standards that have long been in place for offset, pad and flexographic printing are now available to **professional industrial screen printers**: precise, **industrially produced high-tech printing forms** with standardized, process-coated mesh, to ensure constant top quality!

This innovative pre-coated screen printing mesh means a quantum leap for industrial screen printing.



Thanks to intensive technical research and many years of practical experience, Sefar AG is the only manufacturer in the world that has the technical ability to produce a top-quality industrially coated mesh with guaranteed performance values for screen printing.

Production of SEFAR® PreCoated Fabrics screen printing mesh is subject to extremely strict quality to guarantee extremely high process reliability on a scale that was virtually impossible until now.



SEFAR® PreCoated Fabrics



As well as industrial high-tech quality and increased process reliability, SEFAR® PCF gives you even more key benefits:

No need to keep stocks

of emulsion, capillary films, chemicals, etc.



Simpler handling

no time-consuming coatings, no multiple carriage of the screens between coating machine and dryer, no cleaning, no de-coating and no ghost image removes, as well as far less copy rejects

Less outlay

investments, time, plant accessories and required space



Make the PCF quantum leap and eliminate 5 process steps that are likely to cause errors!

old, conventional + likely to cause errors

not standardized, because the screen was produced manually/hand-crafted

modern + progressive thanks to high-tech industrial production

based on precise technical data for measurable screen production that is always reproducible

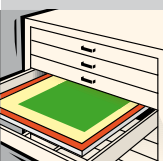


← **Printing** →
Which printing results do your customers prefer?



Exposure

The basic requirement for first-class printing results is high-quality film, i.e. film with final density >3 and best possible resolution

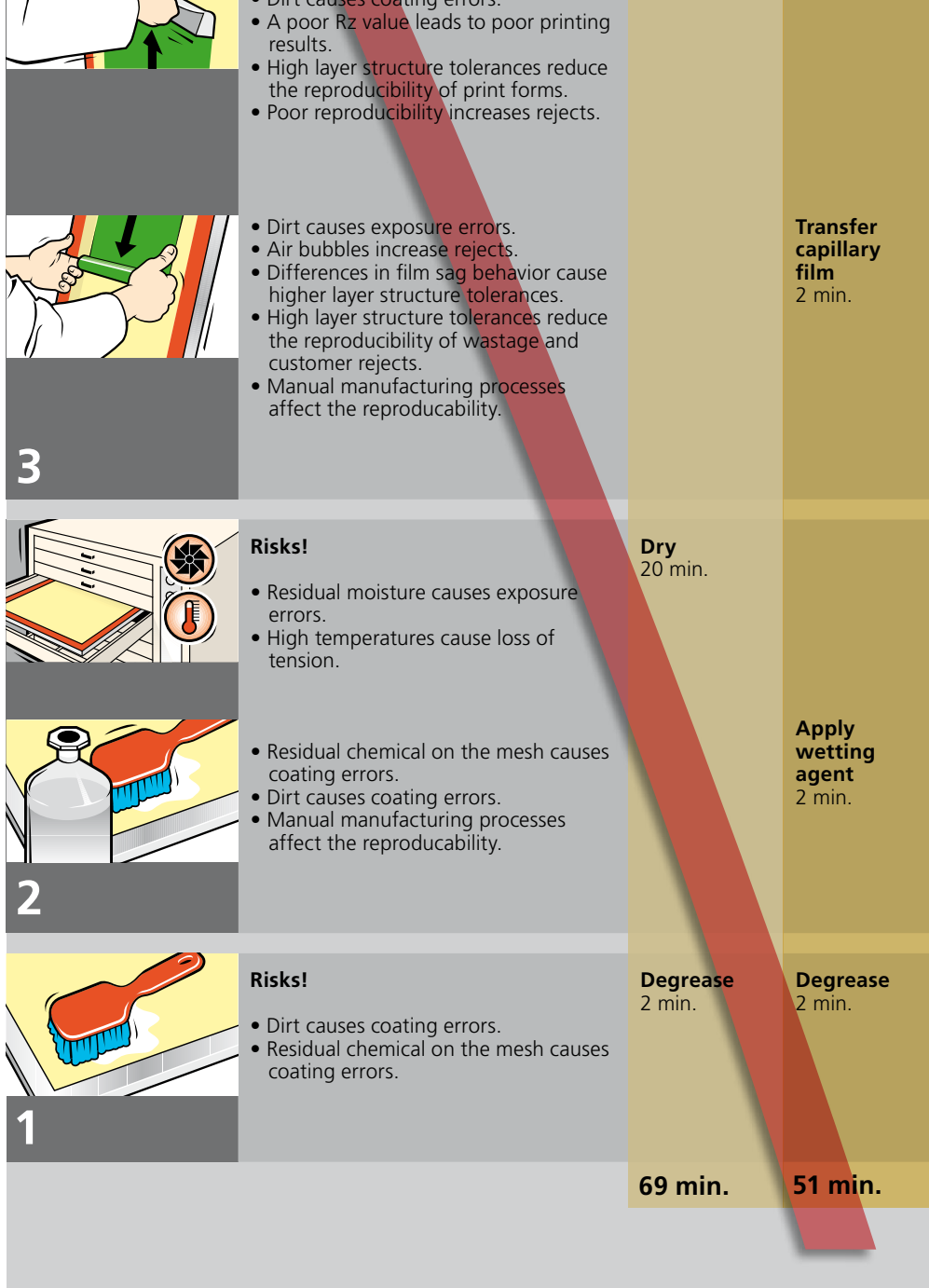
	Caoat	Transfer capillary film
5  Risks! • Coating quality depends on the properties of the coating trough. • Dirt causes errors in print. • Insufficient edge sharpness in print.	Cover + dry 15 min.	Cover + dry 15 min.
4  Risks! • Residual moisture causes exposure errors. • High temperatures cause loss of tension, partly pre-polymerised and/or refractory coatings. • Over-drying causes exposure problems.	Dry 30 min.	Dry 30 min.
 Risks! • Dirt causes coating errors.	Coat 2 min.	

Perfect for exposure

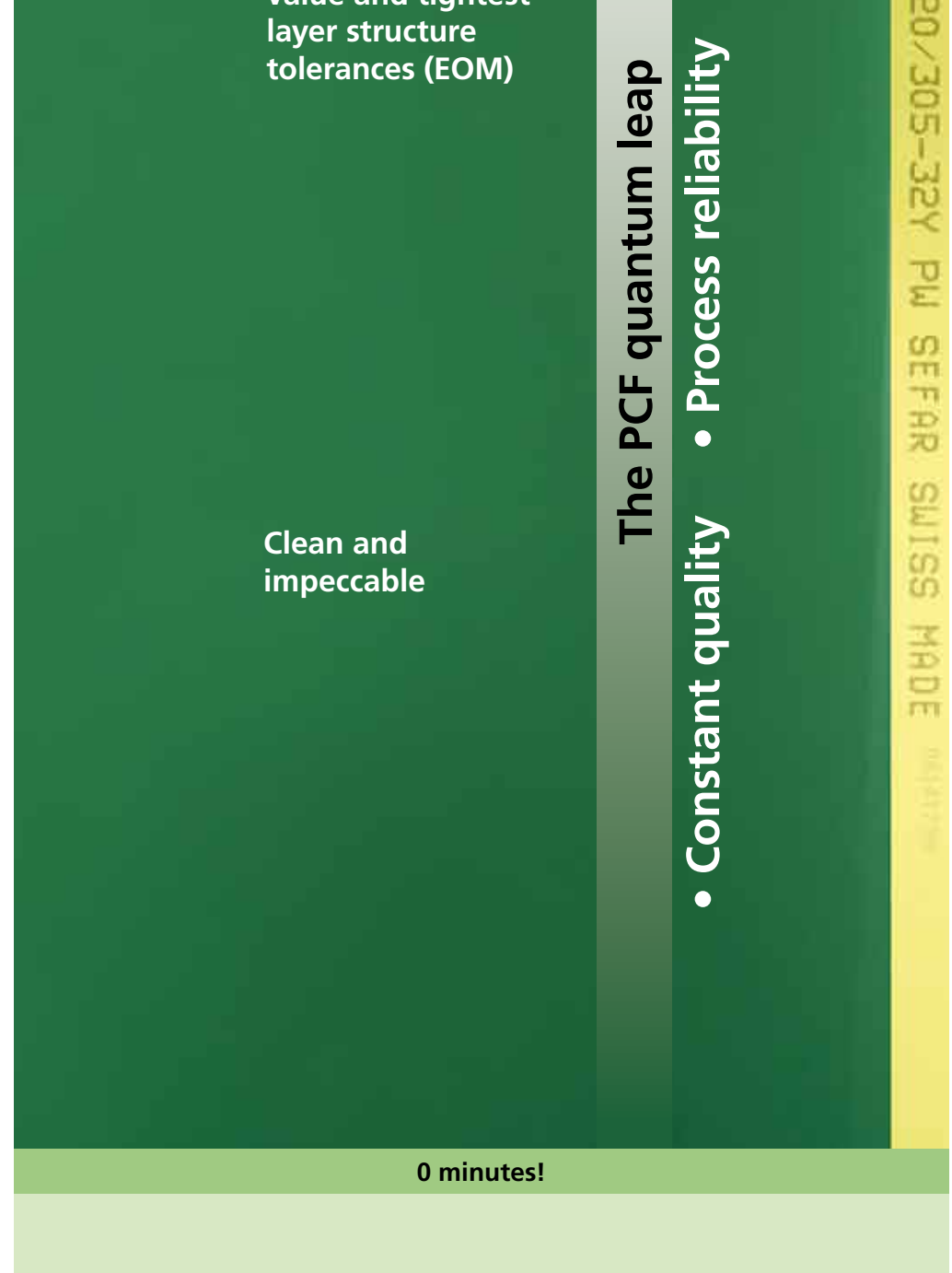
Optimized RZ value and tightest

• Time saved

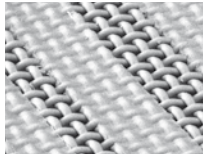
SEFAR PCF 12



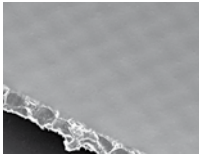
Stretching



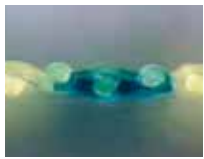
3 essential arguments, for taking SEFAR® PCF



before



now with PCF



conventional



capillary



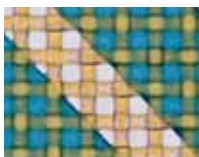
now with PCF



conventional



capillary



now with PCF



before



now with PCF

1. RELIABLE PROCESS ! – The high-tech coating process for top quality printing forms.

SEFAR® PreCoated Fabrics undergo a reliable industrial coating process in line with quality assurance standards.

The result:

standardized, reproducible, coating with minimum tolerances!



2. PRIME QUALITY ! – To quality assurance standards as applied in industry.

Thanks to perfect adjustments between the high res emulsion and the screen printing mesh, constant coating thickness and constant surface roughness it becomes easy to cover customer quality requirements.

Even when printing challenging art-works and high runs, a well reproducibility is still achievable.

The result:

Sharp printing edges and finest detail drawing!

3. SLIM STENCIL MAKING ! – Exposing, developing, drying - ready!

The lack of cleaning, de-coating and coating processes simplifies the job planning and speeds up order transactions.

The result:

Print on demand!

Stencil making becomes clean and environment friendly!

A range with maximum customer flexibility.

SEFAR® PreCoated Fabrics

Innovative pre-coated SEFAR® PreCoated Fabrics are available in line with your specific application requirements

■ fully coated

max. frame dimensions:
800 x 800mm;
mesh widths: 158cm and 115cm
(= standard) and 134cm
upon customer request



■ partially coated

mesh widths as above;
coating geometry to meet
customer-specific requirements



Sefar keeps a core range of all products ready for you. Variances based on individual customer requirements can be defined at any time.

SEFAR® PreCoated Fabrics give industrial screen printing experts measurable top quality, maximum cost-effectiveness and reliability – backed up by first-class accessories and advice on application technology.



**A strong partner that strengthens
your customer relations.**

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As a **technology partner**, Sefar provides you with exclusive access to the latest findings and scientific/technological data that are constantly emerging as the result of our research and development.



As a professional **application technology partner**, Sefar offers you all-round advice and experience – at your premises, through individual training or at one of our Sefar Technical Centers.



Sefar is your technically expert **problem-solver** always on hand, everywhere, with helpful information and practical tips.



Your **market partner** with a global presence. Sefar operates on every continent, in over 100 countries, offering its customers a worldwide network of subsidiaries (with their own stencil production), sales companies and selected sales partners.



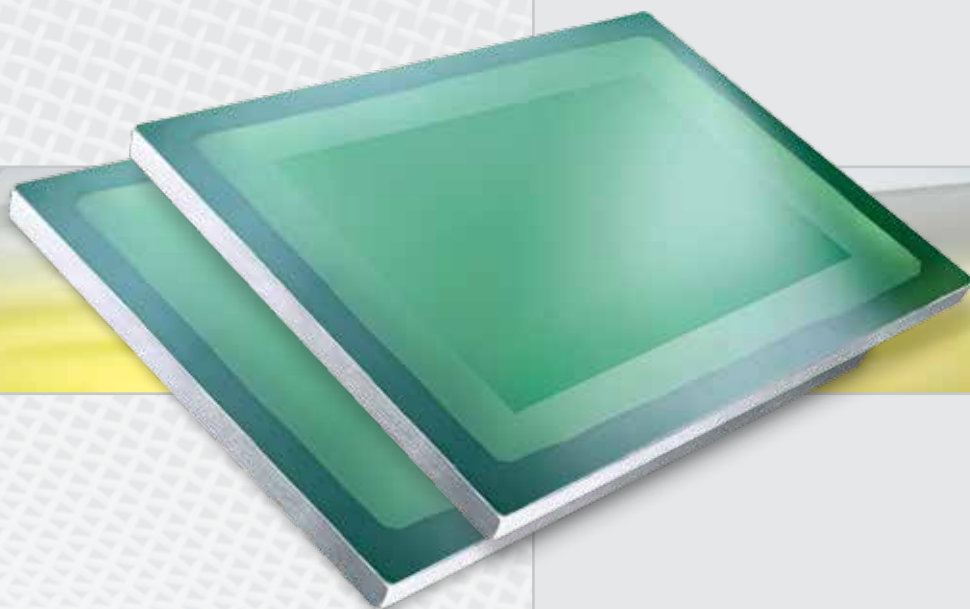
With Sefar, you're backing the dynamic **market leader** for innovative and technically perfect industrial screen printing solutions.

1251 EN 11/2010

Waver: It is exclusively in written agreements that we provide our customers with warrants and representations as to the technical contained specifications and/or the fitness for any particular purpose. The facts and figures herein are carefully compiled to the best of our knowledge, but they are intended for general informational purposes only.

Current data available on www.sefar.com

swiss
mesh
technology



Pre-coated screen printing
mesh for printing of labels
and 3D-objects



Printing Solutions
SEFAR® **PreCoated Fabrics**

S E F A R
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Current data available on
www.sefar.com

SEFAR® PreCoated Fabrics

The unique SEFAR® PCF mesh has specially been developed for industrial screen printing of labels and three-dimensional objects.

At last, standards that have long been in place for offset, pad and flexographic printing are now available to **professional industrial screen printers:** precise, **industrially produced high-tech printing forms** with standardized, process-coated mesh, to ensure constant top quality!

The Sefar product range consists of various mesh types and coating thicknesses in uniform high quality.

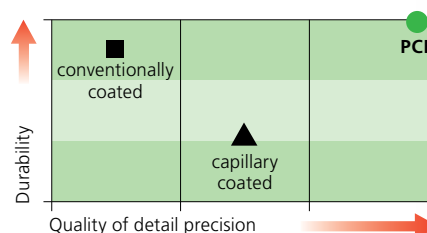


Unique benefits for highest perfection in screen printing of labels and 3D-objects:

- **Very high durability**
- **Einzigartige Druckpräzision** of fine lines, bar codes, characters and dots
- **Constant reproducibility**, the repetition of a print job is simplified significantly. Color variations, tonal values in the screen printing and varying weights are a thing of the past.
- **Slim stencil making!** The lack of cleaning, de-coating and coating processes simplifies the job planning and speeds up order transactions. Intermediate drying necessary due to residual moisture is eliminated, as is re-stretching the stencil and the use of screenfiller. Copy to develop, dry - finished!

Pre-coated is more professionell!

The performance positioning
of SEFAR® PCF screen printing mesh



Technical Information / Processing Instructions

SEFAR® PCF FC



Adhesives for SEFAR® PCF FC are highly chemical resistant 2-component polyurethane-based screen adhesive which were exclusively developed for gluing SEFAR® PCF FC mesh (FC = fully coated) with its novelty being a special bonding technique.

The adhesive for SEFAR® PCF FC corresponds in its handling and processing procedures to usually-known 2-component screen adhesives.

Due to the special application procedure when working with SEFAR® PCF, some key properties of the product were modified, such as viscosity, elasticity, penetration and adhesion, so that it meets in a unique way the special requirements of the adhesion process for this special coated screen system.

Special attention in the development of the 2-component screen adhesives was attributed to removing the fabric from steel or aluminium frames before new restretching.

This fabric removal corresponds to the traditional method of un-coated fabric peel-off which means that the fabric can be easily removed manually without any significant mechanical effort.

Any residues of the 2-component screen adhesives may remain on the frame, provided that the thickness of such layer does not exceed 2 mm.

Processing instructions – Mixing ratio:

First of all the adhesive must be intensively mixed with the isocyanate hardener.

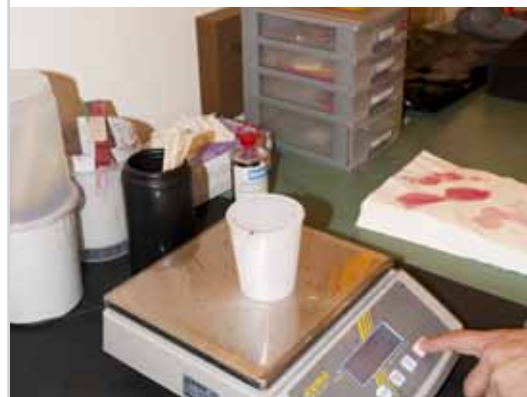
Please make sure that the following mixing ratio is carefully provided:

5 parts by weight of adhesive to
1 part by weight of hardener

The intensive and homogeneous mixture of both components ensure an excellent bonding result.

Pot life:

The pot life of the mixture of adhesive and its hardener is scheduled time depending on the temperature and humidity between 45 - 60 minutes.





Technical Information / Processing Instructions **SEFAR® PCF FC**



1. Stretching room conditions for processing SEFAR® PCF FC

1.1. The stretching room must be protected from UV-A radiation, thus from direct or indirect sunlight. We recommend to cover windows with yellow-light film, or yellow-light acrylic panels. The room lighting should also not contain any UV-A radiation. We recommend to use yellow-light bulbs or tubes, respectively UV-A filtered white-light sources.

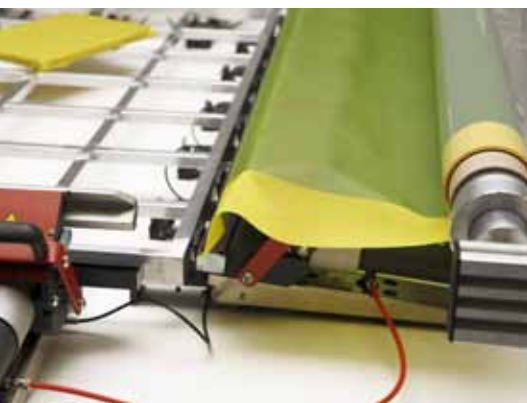
1.2. Room climate: SEFAR® PCF FC fabric and the adhesive and its hardener must be protected from frost or room temperatures of above 35°C. The relative humidity in the storage – or stretching room should not exceed 65%.



2. Preparation and processing of steel and aluminium frames

2.1. New frames should be carefully degreased, using special degreasing chemicals, before the first adhesion of SEFAR® PCF FC. The mesh on used frames must be manually removed before any new fabric is glued onto them.

2.2. Unknown, old adhesive residues as well as dust and grease residues must be carefully removed from the surface of the frames. Any residues of adhesive may remain on the frame, provided that the thickness of such residues does not exceed 2 mm.



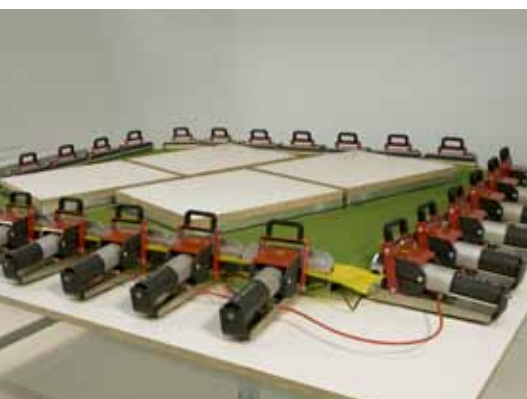
3. Possible setup scenarios of the screen stretching unit

3.1. Pneumatic screen stretching system with inside counter-board and partial layer of foamed plastic mat.

3.2. Mechanical screen stretching system with inside counter-board and partial layer of foamed plastic mat.

3.3. The use of a special aluminium master frame with x/y bracing instead of the inside counter-board is another and highly recommended alternative. The x/y bracing on such a frame allows a much better air circulation under the SEFAR® PCF FC and thus enables a significant reduction of the adhesive's curing time.

Insufficient air flow below the fabric and deficient ventilation in the working area can cause a considerably longer adhesive curing time. This is particularly detrimental in case of multi-stretching processing.



4. Preparation of SEFAR® PCF FC fabric before the stretching process

4.1. Select SEFAR® PCF FC fabric in the desired size and EOM configuration.

4.2. Remove the fabric from its carrier material by means of a cardboard roll and roll it up on this. We recommend this method since it avoids any static charging of the fabric when it's placed on the stretching table.

Technical Information / Processing Instructions **SEFAR® PCF FC**



4.3. Alternatively to this, the fabric can be placed directly from the dispensing unit onto the stretching table.

5. Stretching process

5.1. Place SEFAR® PCF FC fabric with the printing side faced downwards and without frame

5.2. The further stretching process of the fabric is equal to that of conventional, uncoated Sefar screen printing mesh.



6. Positioning and marking of the frame on the screen printing mesh

6.1 The frame is placed on top of the SEFAR® PCF FC fabric. The contours of the inner side of the frame along are marked using water resistant industrial marker, so that the position of the frame based on its inner dimension is provided and visible.



7. Preparation of the adhesive

7.1. The screen adhesives is intensively mixed with the special Hardener in the already mentioned mixing ratio and used immediately afterwards.

8. Application of the adhesive

8.1. The adhesive mixture is applied directly onto the SEFAR® PCF FC fabric, along the outside of the frame positioning line marked on the SEFAR® PCF FC. We particularly recommend the use of a relatively soft bristle brush. The width of the brush should be approximately 0.5 to 1 cm smaller than the width of the frame profile. The ideal amount of adhesive is to be determined by trial and error, since every person is individual in the amount on the brush and the pressure applied. We can recommend an amount of approximately 10 - 15 g per running meter of frame profile, based on a width of 35 mm.

8.2. Immediately after the adhesive is applied the frame is placed on SEFAR® PCF FC, exactly in the position of the adhesive layer and it's marking. Apply some light pressure while doing this, using a small rotation movement in the process. This ensures a smooth and equal distribution of the adhesive on the frame surface as well as on SEFAR® PCF FC surface.

8.3. To ensure an equal and gap-free contact between the frame and the SEFAR® PCF FC it is necessary to place equally distributed weights on top of the frame.





Technical Information / Processing Instructions **SEFAR® PCF FC**

Casting adhesive by means of a PE- or PP cup with cover



Preparation

Cut out a section at the edge of the cover for the drain.

Also cut a hole at the opposite side avoiding any vacuum to ensure a consistent dosage while casting the adhesive onto SEFAR® PCF FC.



Preparation of adhesive



Casting adhesive

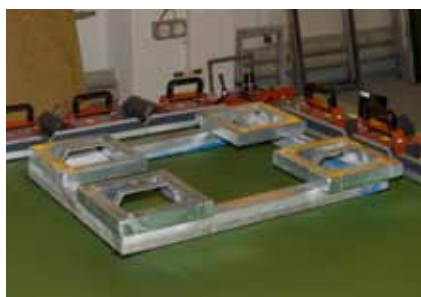


Technical Information / Processing Instructions **SEFAR® PCF FC**



Casting adhesive

Dispersing the adhesive by means of minor circular motions of the frame



Put some weights onto the frame to ensure an equal contact between frame and SEFAR® PCF FC

Curing time



Cut out of SEFAR® PCF FC



Perfect bonding

Glue at the inward frame edge protects the bonding from undercutting aggressive inks or solvents



Technical Information / Processing Instructions **SEFAR® PCF FC**

Easy stripping of used stencils

Removing old adhesive from the edge
of the frame



Remove the cured adhesive easily out of the PE-/PP-cup



Ready for the next gluing cycle



Technical Information / Processing Instructions **SEFAR® PCF FC**



9. Curing time of the adhesive and bonding process

9.1. To ensure an adequate curing and adhesion of the mixture of Adhesive and the Hardener an average curing time (retention time of frame in stretching unit) of approximately 45 - 60 minutes is necessary. In case of multi-stretching processes take care that also for the lastly prepared frame this adhesive curing time is assured.

9.2. Under best conditions of the room climate (20 - 25°C room temperature/ approx. <50% relative humidity) as well as good room ventilation, the curing time for some SEFAR® PCF FC fabric types with a lower thickness of emulsion (EOM), may be reduced. A full layer of foamed plastic under the fabric has a retarding effect of the curing time.

9.3. If a good air circulation and an adequate air exhaust underneath the stretching table is provided, the curing time may be significantly reduced as well, avoiding at the same time the forming of dust.

9.4. We generally recommend adequate and draught-free air circulation in the area of the stretching system.

9.5. After the adhesive is fully hardened the frame profiles are cut out of the stretching system and the frame edges should be smoothed.





Technical Information

SEFAR® PCF

SEFAR® PCF consists of a Sefar-high modulus mesh and a solvent resistant emulsion which has been especially developed for the production of high-quality screen printing stencils, as well as for the application of screen printing designs on different items.

The product is packaged with a polyester liner for support, which has to be removed before the stretching process of the mesh.

SEFAR® PCF is available in different mesh types and variable coating thicknesses.

Application:

- fine half-tone dots and lines with UV- and solvent colors
- high dimensional stability
- SEFAR® PCF offers excellent resolution properties, optimal stencil RZ-values, and outstanding mesh bridging (Mesh bridging).
- SEFAR® PCF enables repeatable screens without high investments thanks to Sefar's unique industrial coating technology.
- CDs, membrane switches, PCB, Solar, labels, cartridges, fine half tone dots and line work are perfect applications for this pre-coated screen printing mesh.

Exposure:

The manufacturing process of a screen printing stencil includes the hardening by UV-light. Blue-actinic light in the wavelength range from 320 - 410 nm is used to harden the parts of the screen which are not printing. Metal halogen lamps are ideally suited exposure sources. Due to the various parameters which influence the exposure time, no absolute value can be given. Ideal printing results have to be defined by trials (step exposure tests). To reach maximum durability, the exposure time should be chosen according to the max. time required to harden a high resolution image containing very fine details. For the resolution of extreme fine details, it is beneficial to reduce the intensity of the exposure, e.g.: cut the power of a 5.000 watt metal halogen lamp in half = 2.500 watt.

Developing:

Moisten the screen with warm water on both sides, leave it on for approx. 30 seconds, and develop it afterwards with cold water on both sides. Insufficient cleaning can cause problems during the printing process due to residual emulsion in the open areas.

Drying:

To produce a screen with high durability, the screen has to dry well. Ideally this takes place in a dust free drying cabinet with fresh air supply at temperatures of 35 – max. 40 °C.

Technical Information

SEFAR® PCF



Post hardening: To produce a water resistant screen, it has to be treated after exposure with hardening agent.

Storage: SEFAR® PCF can be stored easily one year as rolled good or pre-stretched screen.

The following conditions have to be considered:

- protection against frost and temperatures above 35°C
- relative humidity under 65 %
- in dark rooms and protected against UV-light

During long term storage, the emulsion of pre-coated screens can take on humidity from their surroundings. Therefore it is necessary to dry the screen again before exposing.

This increases the stability and facilitates the decoating process.

Marking: It is essential to read the safety data sheet before processing.

The safety data sheet includes the marking as hazardous goods as well as indications concerning safety measures for handling, storage and disposal.