POLYURETHANE
SIKA PRE-TREATMENT CHART
FOR 1-COMPONENT POLYURETHANES – Sikaflex®-100 AND -200 SERIES

UTILISATION OF SIKA PRE-TREATMENT CHART
Information about the pre-treatment of surfaces in this document serves as a guideline only and must be verified by tests on original substrates. Project specific pre-treatment recommendations, based on laboratory tests, are available from Sika upon request. Always consult additional information.
**GENERAL RECOMMENDATIONS FOR Sikaflex®-100 AND -200 SERIES**

**PRECONDITION:**
Surfaces have to be clean, dry and free of oil, fat, dust and loose particles. Depending on the nature of soiling, Sika® Remover-208, Sika® Cleaner P, water based cleaners or steam washer, etc. may be used. For soiled substrates, it might be necessary to grind the surface down to sound material. Verify compatibility with cleaning products.

<table>
<thead>
<tr>
<th>Substrate</th>
<th>EN*</th>
<th>Levels</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum (AlMg3, AlMgSi1 and similar)</td>
<td>1</td>
<td>1</td>
<td>General sealing applications, small components with low level of stress exposure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Non-structural interior bonding applications, no exposure to temperature extremes, no contact with water</td>
</tr>
<tr>
<td>Aluminum (anodized)</td>
<td>2</td>
<td>2</td>
<td>Sealing applications involving large components where higher joint movements are to be expected</td>
</tr>
<tr>
<td>Steel (mild)</td>
<td>3</td>
<td>3</td>
<td>Other applications, not covered under Level 1 and 2, where additional requirements are specified</td>
</tr>
<tr>
<td>Steel (stainless)</td>
<td>4</td>
<td>3</td>
<td>Serial application</td>
</tr>
<tr>
<td>Steel (hot-dip galvanized, electrogalvanized)</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Non-ferrous metals (copper, brass, bronze,...)</td>
<td>6</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2-Component top coat, water- and solvent based (PUR, acrylic)</td>
<td>7</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Powder coat (Polyester (PES), EP/PES)</td>
<td>7</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2-Component paint primer, water- and solvent based (PUR, acrylic, epoxy)</td>
<td>7</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Cathode dip coating (e-coating)</td>
<td>7</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Coil coating, mainly Polyester</td>
<td>8</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FRP (unsaturated polyester) gelcoat side or SMC</td>
<td>9</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FRP (unsaturated polyester) lay-up side</td>
<td>9</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FRP (Epoxy-matrix), CFRP</td>
<td>10</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ABS</td>
<td>11</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hard PVC</td>
<td>11</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PMMA / PC (without anti scratch coating)</td>
<td>12</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>13</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ceramic screen print</td>
<td>13</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Wood / Plywood</td>
<td>14</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

* EN = Explanatory notes see page 4.

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**CONTACT SIKA TECHNICAL DEPARTMENT INDUSTRY**
### PRODUCT DATA AND ABBREVIATIONS

The following product information is an abbreviated version of the current Product Data Sheets.

<table>
<thead>
<tr>
<th>Sika® Aktivator</th>
<th>-100</th>
<th>-205</th>
<th>Sika® Coating Aktivator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color of container cap</td>
<td>orange</td>
<td>yellow</td>
<td>white</td>
</tr>
<tr>
<td>Color of product</td>
<td>colorless to slight yellow</td>
<td>colorless, clear</td>
<td>colorless to slight yellow</td>
</tr>
<tr>
<td>Type of product</td>
<td>Adhesion promoter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application temperature</td>
<td>The general range is 10 – 35 °C. For specific values always refer to the most recent Product Data Sheet.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>Wipe with a clean and lint-free paper towel (Sika Aktivator®-100 wipe on / wipe off application is required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumption</td>
<td>Approximately 20 ml/m² (depending on application method).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash-off time (23 °C / 50 % r.h.)</td>
<td>The minimal range of the flash-off time varies from 10 to 30 minutes depending on product, substrate and climatic conditions. For specific values always refer to the most recent Product Data Sheet.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sika® Primer</th>
<th>-204 N</th>
<th>-206 G+P</th>
<th>-207</th>
<th>-209 D</th>
<th>-210</th>
<th>-215</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color of container cap</td>
<td>light blue</td>
<td>black</td>
<td>black</td>
<td>green</td>
<td>grey</td>
<td>dark blue</td>
</tr>
<tr>
<td>Color of product</td>
<td>opaque yellow</td>
<td>black</td>
<td>black</td>
<td>transparent, yellowish</td>
<td>transparent, yellowish</td>
<td></td>
</tr>
<tr>
<td>Type of product</td>
<td>Primer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application temperature</td>
<td>The general range is 10 – 35 °C. For specific values always refer to the most recent Product Data Sheet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation for use</td>
<td>Shake bottle vigorously until the mixing balls rattle freely. Then continue shaking for an additional minute.</td>
<td></td>
<td></td>
<td></td>
<td>n.a.</td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>Brush / felt / foam applicator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumption</td>
<td>Approximately 50 ml/m² (depending on application method and substrate porosity).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash-off time (23 °C / 50 % r.h.)</td>
<td>The minimal range of the flash-off time varies from 10 to 30 minutes depending on product, substrate and climatic conditions. For specific values always refer to the most recent Product Data Sheet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notice: Sika® activators and primers are moisture reactive systems. In order to maintain product quality it is important to reseal the container immediately after use. With frequent use i.e. opening and closing several times, it is recommend disposing of the product one month after the first opening. With infrequent use, it is recommend disposing of the product 2 months after opening.

When selecting a foam applicator, the solvent resistance must be considered. Suitable products include Sika® Cleaner PCA or melamine foam Basotect from BASF.

### Abbreviation

<table>
<thead>
<tr>
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<th>Product/Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP-C</td>
<td>Abrasive Pad, very fine (e.g. from 3M) + cleaning step by dry wipe, SCP or similar</td>
</tr>
<tr>
<td>GR-V</td>
<td>Grinding (60 – 80 grit) and vacuum cleaning</td>
</tr>
<tr>
<td>SCP</td>
<td>Sika® Cleaner P</td>
</tr>
<tr>
<td>SA-100</td>
<td>Sika® Aktivator-100</td>
</tr>
<tr>
<td>SA-205</td>
<td>Sika® Aktivator-205</td>
</tr>
<tr>
<td>SCA</td>
<td>Sika® Coating Aktivator</td>
</tr>
<tr>
<td>SP-204 N</td>
<td>Sika® Primer-204 N</td>
</tr>
<tr>
<td>SP-206 GP</td>
<td>Sika® Primer-206 G+P</td>
</tr>
<tr>
<td>SP-207</td>
<td>Sika® Primer-207</td>
</tr>
<tr>
<td>SP-209 D</td>
<td>Sika® Primer-209 D</td>
</tr>
<tr>
<td>SP-210</td>
<td>Sika® Primer-210</td>
</tr>
<tr>
<td>SP-215</td>
<td>Sika® Primer-215</td>
</tr>
</tbody>
</table>

Always consult additional information, such as General Guidelines “Bonding and Sealing with Sikaflex®”, current Product Data Sheets, Safety Data Sheets, additional Product- and Technical Information, etc. prior to use of the products. Project oriented solutions are documented in Technical Service reports. These solutions can vary from the table opposite and take priority over the general recommendations provided in this Pre-Treatment Chart.

### LEGAL DISCLAIMER

The information contained herein and any other advice are given in good faith based on Sika’s current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika’s recommendations. The information only applies to the application(s) and product(s) expressly referred to herein and is based on laboratory tests which do not replace practical tests. In case of changes in the parameters of the application, such as changes in substrates, etc., or in case of a different application, consult Sika’s Technical Service prior to using Sika products. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which can be downloaded on your local sika company website or will be supplied on request.
EXPLANATORY NOTES ON SUBSTRATE PREPARATION AND TREATMENT

1. Aluminum
Alloys containing magnesium or silici-
um may form an unstable layer on the sur-
face. This layer must be removed with a
very fine abrasive pad.

2. Aluminum, anodized
For aluminum that has been surface
treated, e.g. chromated, anodized or
coated, a simple pre-treatment is usu-
ally sufficient. Due to the wide variety of
anodizing treatments it is neces-
sary to run preliminary tests to check
for satisfactory adhesion.

3. Steel, mild
Depending on the exposure conditions,
steel is subject to corrosion. Sika prim-
ers, which are applied to the surface in
a very thin layer, do not provide corro-
sion protection as such, see also item
General information.

4. Steel, stainless
The terms “stainless steel” and “spe-
cial steel” encompass a whole group
with an important influence on the
adhesion behavior. Adhesion can be
improved by a prior scuffing step with
a very fine abrasive pad.

5. Steel, hot-dip galvanized,
electrogalvanized
The surface composition of hot-
dip components is not uniform. It is
therefore necessary to carry out peri-
odic adhesion checks. Oiled zinc coat-
ed steel has to be degreased prior to
use. In case of electrogalvanizing the
substrate is prepared to a controlled
specification and the composition of
the surface layer is more or less uni-
form throughout. Do not use abrasives
electrogalvanized steel.

6. Non-ferrous metals
Metals like brass, copper and bronze
are prone to interact with the seal-
ant or adhesive. Therefore it is re-
commended to contact Sika for advice
prior to use.

7. Surface coatings, paint finishes
As a general rule, successful bonding
with Sikaflex® products is expected with
the following paint systems: cat-
aphoretic immersion coatings, pow-
der coatings, epoxy or polyurethane
paints. Alkyd resin paints that dry by
oxidation are not suitable for bond-
ing. When using the following paint
systems: polyvinyl butyral or epoxy
resin ester, cohesion is often higher
than adhesion to the substrate. Caution:
the presence of paint additives
may adversely affect adhesion to the
paint surface. Certain coatings can be
negatively influenced by weathering.
Therefore they have to be protected
against UV-light and other aging
sources prior to bonding.

8. Coll coating
Coll coating is a process which is de-
fined in EN 10169: 2010. It is the pro-
cess for coating metal coils. Available
coatings include polyesters, plastisols,
polyurethanes, polyvinylidene fluo-
rides (PVDF), epoxies. For each prod-
uct, the coating is built up in a number
of layers.

9. FRP (fibre reinforced plastic)
These materials consist for the most
part of thermosetting plastics de-

drieved from unsaturated polyester,
less commonly from epoxy vinyl ester
or phenol formaldehyde resins. Newly
manufactured components have not
yet attained full cure, and as such are
subject to further shrinkage follow-
ing their removal from the mould. For
this reason only aged or tempered FRP
mouldings should be selected for ad-
hesive bonding. The smooth side (gel
coat side) may be contaminated by
mould release agents which will ad-
versely affect adhesion. The surface
of the rough reverse side, which is ex-
posed to the air during manufacturing
has to be thinned prior to additional
surface preparation. Trans-
parent or translucent FRP must follow
the current UV-rules, see item 15.

10. CFRP
(Carbon-fiber-reinforced polymer)
These materials are plastics which
contain carbon fibers. The binding
polymer is often a thermostet resin
such as epoxy, but other thermoset or
thermoplastic polymers such as poly-
ester, vinyl ester or nylon are some-
times used. The properties of the final
CFRP product can also be affected by
the type of additives introduced to the
binding matrix (resin).

11. Plastics
Some plastics require special physio-
chemical treatment before they can be
successfully bonded (flame treatment
or plasma treatment in combination
with chemical pre-treatment). Poly-
propylene and Polyethylene are two
examples. With many plastic blends it
is impossible to give specific guidance
due to the potential variety of com-
ponents and internal/external release
agents they contain. Some engineered
plastics such as ABS, PMMA and PC
may contain substances which can be
dissolved by the solvents of that are
part of the Sika® Primer formulation,
which can then in some cases lead to
issues with adhesion. When primer
is applied in long distances, using re-
peatedly the same brush / dauber or
with specialized applicator bottles,
these substances may be lifted from
the substrate surface and then re-
deposited on the primer surface,
thereby resulting in an adhesion loss
between the primer and adhesive. To
prevent this specific scenario, it is re-
commended that adhesion validation
testing be conducted to confirm that
the maximum amount of primer cov-
erage applied via one brush, dauber,
or applicator tip in serial production
does not result in an unsatisfactory bond.
Thermoplastics are subject to a risk
of stress cracking. Thermally formed
components must be destressed pri-
or to adhesive bonding process.
For transparent or translucent plastics
see item 15.

12. PMMA/PC
Scratch resistant coating on PMMA
or PC must be removed in the bond-
ing area with sand paper (120 grit) and
pre-treated as defined for non-coated
substrates. Note that this last step
may impair the mechanical properties
of the PMMA/PC. Contact Sika for so-
lutions without removal of the coat-
ing. For PMMA and PC substrates we
recommend using a UV barrier, e.g.
UV-Shielding tape. See also further
items 11 and 15.

13. Glass/Ceramic screen print
Due to production, some windscreens
may have silicone contaminated ce-
ramic screen print or glass. It can be
removed by using Sika® Cleaner PCA.

14. Phenolic film faced plywood
These are waterproof plywood panels
with a yellow or brown film facing. The
surface preparation is the same as for
paints and coatings. In some cases it
could be necessary to grind the sur-
face down to the wood and pre-treat
it as such.

GENERAL INFORMATION

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Some plastics require special physico-
chemical treatment before they can be
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or plasma treatment in combination
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it as such.