Pipes and Fittings made of C-PVC
Properties of DEKADUR-C®

C-PVC is a post-chlorinated PVC which has been widely and very successfully used in various fields of industrial engineering for more than thirty years. Due to the post-chlorination the maximum service temperature for continuous operation can be raised up to $T = 95 \, ^\circ C$. Apart from that the chemical resistance of C-PVC against many different media is significantly improved based on the increased Chlorine content. However, C-PVC resembles PVC-U regarding the typical attractive basic properties (e.g. stiffness, low thermal expansion coefficient).

<table>
<thead>
<tr>
<th>Property</th>
<th>Data</th>
<th>Unit</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density at 23 °C</td>
<td>1.55</td>
<td>g/cm$^3$</td>
<td>EN ISO 1183-1</td>
</tr>
<tr>
<td>Tensile strength (23 °C)</td>
<td>60</td>
<td>N/mm$^2$</td>
<td>DIN EN ISO 527</td>
</tr>
<tr>
<td>Impact resistance (notch 0,01” at 23 °C)</td>
<td>18</td>
<td>kJ/m$^2$</td>
<td>DIN ISO 180</td>
</tr>
<tr>
<td>Vicat-softening point (B 50)</td>
<td>&gt; 110</td>
<td>°C</td>
<td>ISO 306</td>
</tr>
<tr>
<td>Linear coefficient of thermal expansion</td>
<td>0.07</td>
<td>mm/(mK)</td>
<td>–</td>
</tr>
<tr>
<td>Thermal conductance</td>
<td>0.2</td>
<td>W/(mK)</td>
<td>–</td>
</tr>
<tr>
<td>E-modulus at 23 °C (tensile)</td>
<td>3.300</td>
<td>N/mm$^2$</td>
<td>–</td>
</tr>
</tbody>
</table>

Benefit to the user of DEKADUR-C®

Unique profile of material properties due to:
- service temperature range 0 – 80 °C (liner pipes 95 °C)
- far-reaching chemical resistance against (concentrated) mineral acids and oxidizing agents
- low thermal conductivity and very low coefficient of thermal expansion
- flame retardant according to DIN 4102 B 1
- impact resistance
- high level of mechanical properties
- FRP-wrapping is possible
- very low steam permeability at high service temperature

Outstanding chemical resistance due to:
- smooth inner surface
- increased content of Chlorine
- formulation [i.e. combination of applied additives]
Cost-saving due to:
– comparatively low material costs
– quick and simple installation technique
– availability of pipes and fittings ex stock, ranging from OD 16 – 225 mm in various pressure rates and with harmonized (i.e. reduced) tolerances
– prolonged service life – even under harsh conditions

Efficient solution – long lasting and safe due to:
– outstanding competence of Georg Fischer DEKA based on more than 25 years of experience with C-PVC as pipe material
– highest level of quality:
  DIN ISO 9001, DIN 8079/80, DIN CERTCO, DVGW
– best references

Based on the enlargement of the C-PVC-programme in close cooperation with Georg Fischer we are now ready to offer an unique choice of pipes, fittings as well as semi-finished-products (welding rod, sheets, bars) for various fields of application, such as:
– Chlorine electrolysis and affiliated industry
  (note that we offer C-PVC liner-pipes OD 25 up to 600 mm)
  (Lead free, low Ca, Mg)
– electroplating
– industrial piping for transport of (hot and concentrated) mineral acids or oxidizing solutions
– plants for coating
– transport of both – hot and drinking water
  (cf. pipes OD 16 – 63 mm are approved according to DVGW)
– industrial ventilation

Processing DEKADUR-C®

Adhesive joints
In general DEKADUR-C® pipes are connected by adhesive joints. In particular we recommend “TANGIT 95” (by Henkel) for optimized performance.
All respective installation work has to comply with the “TANGIT” instructions, the “DVS-guideline” 2204/T1 or the “Klebeanleitung” issued by the “Kunststoffrohrverband” (KRV).

Welding
There are some particular applications which require welding of DEKADUR-C®. In this case hot gas welding is applied. Welding of C-PVC requires specific training and some experience. Apart from that, a DVS-specification for butt-fusion welding of C-PVC pipes and sheets will be published soon. Note that experienced welders easily achieve welding factors > 0.7. For detailed information please do not hesitate to contact Georg Fischer DEKA.

Thermoforming
Using the know-how of high quality and experienced OEM’s, various thermoforming-techniques can be applied to DEKADUR-C® (e.g. beading, production of elbows etc.)

Cutting processes
All kinds of standard methods, like sawing, milling or drilling can be applied to DEKADUR-C® without any problem.
At Georg Fischer DEKA we are prepared to support our customer in any question or sophisticated requirement in this regard. Please contact us.
GEORG FISCHER DEKA GmbH –
Your partner for:
– Piping systems for industrial application (e.g. chemical engineering), pneumatic dispatch, ventilation.
– Pipe-shaped semi-finished products with option for milling, bending, drilling, etc.
– Processing of other materials available upon request.
– Custom made solutions regarding dimension, shape, colour, length, formulation.

DEKA industrial pipes made of PE 100 Polyethylene
DEKAPROP® industrial pipes made of β-PP-H Polypropylene homopolymer, DIBT-approved
DEKAPROP®-HP pipes made of β-PP-H for High Purity applications (capped & double bagged)
DEKAPROP®-s ventilation pipes made of PP-s Polypropylene flame-retardant according to DIN 4102 B1
DEKADUR industrial pipes made of PVC-U DIBT and DVGW approved
DEKADUR ventilation pipes made of PVC-U flame-retardant according to DIN 4102 B1
DEKADUR rectangular pipes made of PVC-U (on request)
DEKADUR-G pipes made of PVC-U transparent
DEKADUR-Z pipes made of PVC-U impact-resistant (on request)
DEKADUR-L-HP pipes made of PVC-U red food approved
DEKADUR industrial and liner pipes made of PVC-U “troisdorfred”, DIBT-approved
DEKADUR-C® industrial pipes made of High Vicat C-PVC DVGW approved
DEKADUR-C® liner and ventilation pipes made of High Vicat C-PVC
DEKAZOL® pipes made of CAB crystal clear
DEKATEC® pipes made of HPM (High Performance Material)

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