SIKAFIBER® Product Proposal

FOR FIBER REINFORCED CONCRETE SLABS ON GROUND

PROJECT INFORMATION

<table>
<thead>
<tr>
<th>Project reference</th>
<th>ABC / 246810</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project name</td>
<td>New Multi-Purpose Warehouse</td>
</tr>
<tr>
<td>Customer</td>
<td>Your Customer Ltd</td>
</tr>
<tr>
<td>Date</td>
<td>20/02/2020</td>
</tr>
<tr>
<td>Calculation title</td>
<td>Warehouse A - Zone 1</td>
</tr>
<tr>
<td>Calculation by</td>
<td>DTI</td>
</tr>
<tr>
<td>Approved by</td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td>General loading + forklift + racking 1,2 and 3 + UDL</td>
</tr>
<tr>
<td>Country</td>
<td>Switzerland</td>
</tr>
</tbody>
</table>

PRODUCT INFORMATION

<table>
<thead>
<tr>
<th>Product</th>
<th>SikaFiber® Force-50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage</td>
<td>3.0 kg/m³</td>
</tr>
</tbody>
</table>

DESIGN SUMMARY

<table>
<thead>
<tr>
<th>Design method</th>
<th>Concrete Society Technical Report 34 - Concrete Industrial Ground Floors, 4th Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete class</td>
<td>C40/50</td>
</tr>
<tr>
<td>Slab thickness</td>
<td>h = 300 mm</td>
</tr>
<tr>
<td>Joint spacing</td>
<td>x = 5000 mm; y = 5000 mm</td>
</tr>
<tr>
<td>Modulus of subgrade reaction</td>
<td>k = 0.020 N/mm³</td>
</tr>
</tbody>
</table>

LOADING SUMMARY

<table>
<thead>
<tr>
<th>CHECKING TYPE</th>
<th>LOAD CASE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bending</td>
<td>Mezzanine 1</td>
<td>0.9721</td>
</tr>
<tr>
<td>Bending (MHE)</td>
<td>MHE 1</td>
<td>0.9160</td>
</tr>
<tr>
<td>Punching</td>
<td>Mezzanine 1</td>
<td>0.6868</td>
</tr>
<tr>
<td>Uniformly distributed loads</td>
<td>Uniform load 1</td>
<td>0.7331</td>
</tr>
<tr>
<td>Linearly distributed loads</td>
<td>Linear load 1</td>
<td>0.1167</td>
</tr>
</tbody>
</table>
NOTES

Joints are placed in the slab to minimize the risk of cracking

- In fiber reinforced floors use square panels or limit the length-to-width (aspect ratio) to 1:1.5
- Limit the longest dimension between to sawn joints <6 m
- Avoid re-entrant corners
- Avoid slabs with acute angles at corners
- Avoid restrained shrinkage of the slab, isolate the slab around fixed points
- Avoid point loads in corners

Shrinkage and curling shall be evaluated on a project basis. There are several factors including, but not limited to.

- Internal concrete stresses occur greatly depending on the aggregate size, type and quality; the water content, cement paste content, admixture usage, concrete temperature and generally the mix design.
- Placement conditions due to the sub-grade moisture and preparation, sub-grade restraint and protection from environmental and ambient conditions (temperature variations, wind and humidity)
- Location and timeliness of jointing and proper joint activation.
- Proper curing is vital to all concrete construction. The standard rules of good concreting practice, concerning production and placing, shall be followed.
INDEX

1.- DESIGN DATA............................................................................................................................................................ 4

2.- RESULTS........................................................................................................................................................................ 4
  2.1.- Summary of results........................................................................................................................................ 4
  2.2.- Fibre reinforcement proposal........................................................................................................................ 5
  2.3.- Capacity of fibre reinforced section................................................................................................................... 5
  2.4.- Bending checking............................................................................................................................................. 7
  2.5.- Punching checking............................................................................................................................................... 7
  2.6.- Line load checking............................................................................................................................................ 9
  2.7.- Uniform distributed load (UDL) checking........................................................................................................ 10
  2.8.- Other verifications.............................................................................................................................................. 10

3.- ALSO AVAILABLE FROM SIKA......................................................................................................................... 11

4.- LEGAL DISCLAIMER.................................................................................................................................................... 12

5.- ABOUT SIKA FIBER® CALCULATION SOFTWARE.................................................................................................. 12
1.- DESIGN DATA

Regulations

Partial safety factors for materials

<table>
<thead>
<tr>
<th>Material</th>
<th>$\gamma_m$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete / Fibre reinforced concrete</td>
<td>1.50</td>
</tr>
<tr>
<td>Steel</td>
<td>1.15</td>
</tr>
</tbody>
</table>

Partial safety factors for loads

<table>
<thead>
<tr>
<th>Loads</th>
<th>$\gamma_F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racking loads</td>
<td>1.20</td>
</tr>
<tr>
<td>Permanent loads</td>
<td>1.35</td>
</tr>
<tr>
<td>Variable loads</td>
<td>1.50</td>
</tr>
<tr>
<td>Dynamic loads</td>
<td>1.60</td>
</tr>
<tr>
<td>Uniformly distributed loads</td>
<td>1.00</td>
</tr>
<tr>
<td>Linearly distributed loads</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Soil parameters

$k$: modulus of subgrade reaction

Concrete data

Concrete class: C40/50

$f_{ck}$: Characteristic cylinder compressive strength of concrete

$E_{cm}$: secant modulus of elasticity of concrete

$f_{ctm}$: Mean axial tensile strength

$\nu$: Poisson's ratio

$\begin{align*}
  k & : 0.020 \text{ N/mm}^2 \\
  f_{ck} & : 40.00 \text{ MPa} \\
  E_{cm} & : 35220.46 \text{ MPa} \\
  f_{ctm} & : 3.51 \text{ MPa} \\
  \nu & : 0.20
\end{align*}$

Slab panel data

Panel dimensions: 5000 x 5000 mm
Load transfer at the edge: 15.0%
Load transfer at the corner: 15.0%

Reinforcement information

Reinforcement for bending: Not considered
Local reinforcement for punching: Not considered

2.- RESULTS

2.1.- Summary of results

<table>
<thead>
<tr>
<th>Checking</th>
<th>Load case</th>
<th>Type</th>
<th>Usage ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bending</td>
<td>Mezzanine 1</td>
<td>Single point load</td>
<td>0.9721</td>
</tr>
<tr>
<td>Bending (MHE)</td>
<td>MHE 1</td>
<td>Single point load</td>
<td>0.9160</td>
</tr>
<tr>
<td>Punching</td>
<td>Mezzanine 1</td>
<td>Single point load</td>
<td>0.6868</td>
</tr>
<tr>
<td>Uniformly distributed loads</td>
<td>Uniform load 1</td>
<td>Uniformly distributed load</td>
<td>0.7331</td>
</tr>
<tr>
<td>Linearly distributed loads</td>
<td>Linear load 1</td>
<td>Line loads</td>
<td>0.1167</td>
</tr>
</tbody>
</table>
2.2.- Fibre reinforcement proposal

Fibre-reinforced concrete data
- Fibre type: Synthetic Macro-fibres
- Sika product: SikaFiber® Force-50
- Fibre dosage: 3.0kg/m³
- \( f_{c,k} \): Characteristic cylinder compressive strength of concrete
- \( f_{R1} \): Residual flexural strength at CMOD 0.5
- \( f_{R2} \): Residual flexural strength at CMOD 1.5
- \( f_{R3} \): Residual flexural strength at CMOD 2.5
- \( f_{R4} \): Residual flexural strength at CMOD 3.5
- \( h \): Thickness of the slab
  - Joint spacing (X-direction): 5000mm
  - Joint spacing (Y-direction): 5000mm

2.3.- Capacity of fibre reinforced section

The ultimate moment capacity is dependent on the strain at the extremity of the section. On the compression face, the strain is limited to 0.0035, as is the case for conventional reinforced concrete sections. On the tension face, the strain is limited to 0.025.

The moment - crack width (M-w) response of the section is derived in terms of the residual strengths \( f_{R1} \) and \( f_{R4} \) obtained from the EN 14651 beam test. \( f_{R1} \) and \( f_{R4} \) represent the flexural tensile stresses at a Crack Mouth Opening Displacement (CMOD) of 0.5mm and 3.5mm respectively in the 150mm deep test beam. Although in sections deeper than 150mm, the strain at a CMOD of 3.5mm will be lower than in the test beam, the maximum tensile strain is set at the value resulting from a CMOD of 3.5mm, subject to a limiting maximum strain of 0.025.

For a slab with a low (cracked) flexural tensile capacity, the compressive strain in the concrete may remain in the elastic range, below 0.00175, in which case the concrete stress block is triangular. As the flexural tensile capacity increases, the compressive strain in the concrete increases and the compressive stress block becomes bi-linear.

Stress and strain diagram for bi-linear stress block for strain softening \( |\sigma_{t1}| > |\sigma_{t4}| \)
Stress and strain diagram for bi-linear stress block for strain hardening \( |\sigma_{t1}| < |\sigma_{t4}| \)
\begin{align*}
\varepsilon_{e,\text{max}} & : \text{Maximum tensile strain in fibre reinforced concrete} \\
\varepsilon_{f,\text{max}} & : \text{Maximum compressive strain concrete} \\
\sigma_{s1} & : \text{Mean axial tensile strength derived from beam test EN 14651 at CMOD 0.5} \\
& \quad \sigma_{s1} = 0.45 \cdot f_{s1} \\
f_{s1} & : \text{Residual flexural strength at CMOD 0.5} \\
\sigma_{s4} & : \text{Mean axial tensile strength derived from beam test EN 14651 at CMOD 3.5} \\
& \quad \sigma_{s4} = 0.37 \cdot f_{s4} \\
f_{s4} & : \text{Residual flexural strength at CMOD 3.5} \\
f_{c0} & : \text{Characteristic cylinder compressive strength of concrete} \\
\gamma_c & : \text{Partial safety factor for concrete} \\
\end{align*}

The stresses in the steel reinforcement are derived from the stress-strain curves in the section 3.2 of EN 1992-1-1:

- $\varepsilon_{e,\text{max}} = 25.00\%$
- $\varepsilon_{f,\text{max}} = 3.50\%$
- $\sigma_{s1} = 0.60\ \text{MPa}$
- $f_{s1} = 1.32\ \text{MPa}$
- $\sigma_{s4} = 0.42\ \text{MPa}$
- $f_{s4} = 1.13\ \text{MPa}$
- $f_{c0} = 40.00\ \text{MPa}$
- $\gamma_c = 1.50$

The negative moment of the slab is taken to be that of the plain unreinforced concrete.

- $M_s = 50.83\ k\cdot\text{m/m}$
- $M_n = 45.61\ k\cdot\text{m/m}$

The negative moment of the slab is taken to be that of the plain unreinforced concrete.

\begin{align*}
\varepsilon_{\text{max}} & : \text{Maximum strain} \\
\varepsilon_{\text{min}} & : \text{Minimum strain} \\
\sigma_{\text{max}} & : \text{Maximum stress} \\
\sigma_{\text{min}} & : \text{Minimum stress} \\
x & : \text{Distance from extreme compression fiber to neutral axis} \\
M_n & : \text{Negative resistance moment per unit width of slab} \\
\end{align*}

The stresses in the steel reinforcement are derived from the stress-strain curves in the section 3.2 of EN 1992-1-1:

- $\varepsilon_{\text{max}} = 2.22\%$
- $\varepsilon_{\text{min}} = -24.88\%$
- $\sigma_{\text{max}} = 22.67\ \text{MPa}$
- $\sigma_{\text{min}} = -1.13\ \text{MPa}$
- $x = 25\ \text{mm}$

The negative moment of the slab is taken to be that of the plain unreinforced concrete.

\begin{align*}
M_n & = f_{\text{ctd,fl}} \left( \frac{h^2}{6} \right) \\
h & : \text{Slab thickness} \\
f_{\text{ctd,fl}} & : \text{Design concrete flexural tensile strength} \\
f_{\text{ctd,fl}} = f_{\text{ctm}} \times (1.6 - \frac{h}{1000}) / \gamma_c \geq f_{\text{ctm}} / \gamma_c \\
f_{\text{ctm}} & : \text{Mean axial tensile strength} \\
\gamma_c & : \text{Partial safety factor for material} \\
\end{align*}

\begin{align*}
h & : 300\ \text{mm} \\
f_{\text{ctd,fl}} & : 3.04\ \text{MPa} \\
f_{\text{ctm}} & : 3.51\ \text{MPa} \\
\gamma_c & : 1.50
\end{align*}
2.4.- Bending checking

**Single point load**

Corner location

\[ \frac{P_d}{P_u} \leq 1.0 \]

\[ P_d \text{ required ultimate load} \]

\[ P_d = \sum \gamma_{f_1} \cdot P_1 \cdot (1 - \alpha / 100) \]

\[ \gamma_{f_1} : \text{Partial safety factor for load} \]

\[ \gamma_{f_2} : \text{Partial safety factor for load} \]

P1: Point load

P2: Point load

\[ \alpha : \text{Load transfer at the corner} \]

\[ P_u : \text{Total failure load} \]

Failure load obtained by linear interpolation between values of a/l between 0 and 0.2

\[ \frac{P_{u,0}}{P_u} = 2M_u \]

\[ \frac{P_{u,0,2}}{P_u} = 4M_u \left[ 1 - \left( \frac{a}{l} \right) \right] \]

\[ a / l : \text{radius of contact area-radius of relative stiffness ratio} \]

\[ a : \text{equivalent radius of contact area of the load} \]

\[ a = \sqrt{A / \pi} \]

\[ A_p : \text{baseplate area} \]

\[ l : \text{radius of relative stiffness} \]

\[ l = \left( \frac{E_{cm} h^3}{12(1 - v^2) k} \right)^{1/25} \]

\[ E_{cm} : \text{secant modulus of elasticity of concrete} \]

\[ v : \text{Poisson's ratio} \]

\[ h : \text{Slab thickness} \]

\[ k : \text{modulus of subgrade reaction} \]

\[ M_n : \text{negative resistance moment per unit width of slab} \]

2.5.- Punching checking

**Shear on the critical perimeter**

**Single point load**

Corner location

\[ \frac{P_d}{P_u} \leq 1.0 \]

\[ P_d \text{ required ultimate load} \]

\[ P_d = P'_d - R_{op} \]

\[ P'_d = \sum \gamma_{f_1} \cdot P_1 \cdot (1 - \alpha / 100) \]

\[ \gamma_{f_1} : \text{Partial safety factor for load} \]

\[ \gamma_{f_2} : \text{Partial safety factor for load} \]
$P1$: Point load

$P2$: Point load

$\alpha$: Load transfer at the corner

$R_{\text{cp}}$: sum of ground pressures within critical perimeter

$$R_{\text{cp}} = 2.9 \left( \frac{d}{l} \right)^2 P' + 1.9 \cdot u_0 \cdot \frac{dP'}{l^2}$$

$u_0 = x + y$

$l$: radius of relative stiffness

$P_p$: Slab load capacity in punching

$$P_p = \left( v_{\text{rdc}} + v_f \right) u_0 d$$

$v_{\text{rdc}}$: concrete shear strength on the critical shear perimeter

$$v_{\text{rdc}} = \frac{0.18k}{\gamma_c} \left( 100 \rho f_{ck} \right)^{0.33} \geq 0.035k^{1.5} f_{ck}^{0.5}$$

$k_c = 1 + \left( 200 / d \right)^{0.5} \leq 2$

$$\rho_1 = \sqrt{\rho \rho_f}$$

$\rho$: Reinforcement ratio for punching

$v_f$: Increase in shear strength given by fibres

$$v_f = 0.015 \left( f_{\text{cm}} + f_{\text{cm}2} + f_{\text{cm}3} + f_{\text{cm}4} \right)$$

$u_1$: length of the perimeter at a distance $2 \cdot d$ from the loaded area

$$u_1 = u_0 + \pi d$$

$u_0 = x + y$

$x$: effective dimensions of the bearing plate

$y$: effective dimensions of the bearing plate

$d$: effective depth

$P1 = 40.000$ kN

$P2 = 50.000$ kN

$\alpha = 15.0$%

$R_{\text{cp}} = 13.000$ kN

$l = 1425$ mm

$P_p = 140.719$ kN

$v_{\text{rdc}} = 0.60$ MPa

$\rho_1 = 0.000$%

$v_f = 0.08$ MPa

$u_1 = 927$ mm

$x = 120$ mm

$y = 100$ mm

$d = 225$ mm
2.6. Line load checking

\[ P_{d,\text{lin}} / P_{u,\text{lin}} \leq 1.0 \]

- \( P_{d,\text{lin}} \): required ultimate line load per unit length
  \[ P_{d,\text{lin}} = \gamma_f \cdot P_{\text{lin}} \]
  - \( \gamma_f \): Partial safety factor for load
  - \( P_{\text{lin}} \): linear load per unit length
- \( P_{u,\text{lin}} \): capacity of the slab under the action of a line load per unit length

Where a line load is located adjacent to a free edge, the capacity is \( 3 \lambda M_n \) increasing to \( 4 \lambda M_n \) over a distance of \( 3 / \lambda \). For a joint with a minimum load transfer capacity of 15%, the capacity increases to \( 4 \lambda M_n \) at a distance of \( 1 / \lambda \).

\[ P_{u,\text{lin}} = 4 \lambda M_n \quad d_e \geq 3 / \lambda \]
\[ P_{u,\text{lin}} = 3 \lambda M_n \quad d_e \leq 1 / \lambda \]

- \( \lambda \): Characteristic of the system
  \[ \lambda = \left( \frac{3k}{E_{\text{cm}} h^3} \right)^{0.25} \]
- \( k \): Modulus of subgrade reaction
- \( E_{\text{cm}} \): Modulus of elasticity of the concrete
- \( h \): Slab thickness
- \( M_n \): negative resistance moment per unit width of slab
  \[ M_n = f_{\text{ctd,fl}} \left( h^2 / 6 \right) \]
  - \( f_{\text{ctd,fl}} \): Design concrete flexural tensile strength
  - \( d_e \): distance from edge or joint

\[ P_{d,\text{lin}} / P_{u,\text{lin}} : 0.1167 \quad \checkmark \]
\[ P_{d,\text{lin}} : 8.00 \text{ kN/m} \]
\[ \gamma_f : 1.00 \]
\[ P_{\text{lin}} : 8.00 \text{ kN/m} \]
\[ P_{u,\text{lin}} : 68.58 \text{ kN/m} \]
\[ \lambda : 0.005012 \text{ 1/cm} \]
\[ k : 0.020 \text{ N/mm}^3 \]
\[ E_{\text{cm}} : 35220.46 \text{ MPa} \]
\[ h : 300 \text{ mm} \]
\[ M_n : 45.61 \text{ kN-m/m} \]
\[ f_{\text{ctd,fl}} : 3.04 \text{ MPa} \]
\[ d_e : 300 \text{ mm} \]
2.7.- Uniform distributed load (UDL) checking

\[ q_d / q_u \leq 1.0 \]

\[ q_d \] required ultimate uniformly distributed load

\[ q_d = \gamma_f \cdot q \]

\[ \gamma_f \]: Partial safety factor for load

Partial safety factor for load (TR-34 4th Edition, clause 7.12). The elastic analysis is based on the work of Hentenyi. This analysis has traditionally used a global safety factor of 1.5. As a factor of 1.5 is already applied to the material properties, an additional factor should not be applied to the load.

\[ q_d = 50.0 \text{kN/m}^2 \]

\[ q_u : 68.2 \text{kN/m}^2 \]

\[ q : \text{Uniformly distributed load} \]

\[ q_u : 68.2 \text{kN/m}^2 \]

\[ q : 50.0 \text{kN/m}^2 \]

\[ \gamma_f : 1.00 \]

\[ \lambda : 0.005012 \text{1/cm} \]

\[ M_n : 45.61 \text{kN-m/m} \]

\[ M_p : 50.83 \text{kN-m/m} \]

\[ f_{ctd, fl} : 3.04 \text{MPa} \]

\[ M_n : 45.61 \text{kN-m/m} \]

\[ M_p : 50.83 \text{kN-m/m} \]

\[ f_{ctd, fl} : 3.04 \text{MPa} \]

The maximum negative moment is induced between a pair of patch loads each of breadth \( \pi / \lambda \) spaced a distance \( \pi / \lambda \) apart. This spacing is commonly known as the critical aisle width. The maximum positive bending moment in the slab is caused by a load of breadth \( \pi / 2\lambda \).

2.8.- Other verifications

The panel length to width ratio should not exceed 1:1.5.

\[ L_{max} / L_{min} : 1.00 \]

Limiting the longest dimension between sawn joints to typically 6000 mm.

\[ L_{max} : 5000 \text{mm} \]

\[ X : 5000 \text{mm} \]

\[ Y : 5000 \text{mm} \]
3. ALSO AVAILABLE FROM SIKA

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Admixtures</td>
<td>Optimising the fresh and/or hardened properties of concrete using plasticizers, water reducers, accelerators, retarders, air-entrainment, shrinkage reducers, antifreeze, corrosion inhibitors</td>
<td>Sika Viscoflow®, Visocrete®, SikaControl®, FerroGard®, SikaRapid®</td>
</tr>
<tr>
<td>Pumping</td>
<td>For use with unfavourable aggregates and protecting equipment from excessive wear. Maintains internal cohesion.</td>
<td>SikaPump®, Sika® Stabilizer</td>
</tr>
<tr>
<td>Curing</td>
<td>Liquid agents or sheets protecting the slab from premature drying.</td>
<td>Antisol®, Sika® Ultracure</td>
</tr>
<tr>
<td>Mould Release</td>
<td>Extend longevity of formwork by preventing concrete from sticking to the mould.</td>
<td>Sika® Separol®</td>
</tr>
<tr>
<td>Joints</td>
<td>Preventing dirt from filling the joint, accommodating movement and protecting the edges allowing smooth joint crossing.</td>
<td>Sikaflex®</td>
</tr>
<tr>
<td>Surface hardeners</td>
<td>Improve slab life span by impregnating the surface or by forming a monolithic layer.</td>
<td>Sika® CureHard, Sikafloor®</td>
</tr>
<tr>
<td>Surface coatings</td>
<td>Increase resistance against mechanical and chemical attack.</td>
<td>Sikafloor®, SikaScreed®</td>
</tr>
</tbody>
</table>
4.- LEGAL DISCLAIMER

THIS SOFTWARE APPLICATION AND THE RESULTS DERIVED FROM ITS UTILIZATION ARE INTENDED ONLY FOR USE BY PROFESSIONAL USERS WITH EXPERT KNOWLEDGE IN THE AREA OF THE INTENDED APPLICATION. USERS MUST INDEPENDENTLY VERIFY THE RESULTS BEFORE ANY USE AND TAKE INTO ACCOUNT THE SITE AND APPLICATION CONDITIONS, PRODUCT DATA SHEET AND PRODUCT LITERATURE, TECHNICAL STATE OF THE ART AS WELL AS LOCAL APPLICABLE STANDARDS AND REGULATIONS.

With respect to the software application and results derived from its use, SIKA MAKES NO WARRANTIES OF ACCURACY, RELIABILITY, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PURPOSE. THE SOFTWARE APPLICATION IS PROVIDED ON AN "AS-IS" BASIS AND SIKA EXPRESSLY DISCLAIMS ANY WARRANTIES WITH RESPECT TO THE SOFTWARE APPLICATION AND RESULTS DERIVED FROM ITS USE.

Sika shall not be liable for any consequential, punitive, incidental, exemplary, or special damages (including but not limited to loss of business opportunity or loss of profit) arising out of the evaluation or use of the software application and results derived from its use.

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, 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. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product’s suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. 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 will be supplied on request.

Except as indicated otherwise, all information, text, graphic images, features, functions, and layout contained in this software are the exclusive property of Sika and may not be copied or distributed, in whole or in part, without the Company’s express written consent.

By transmitting information to Sika, you grant to the Company the unrestricted irrevocable license to use, reproduce, display, modify, distribute and perform such information. Personal identity information is used by Sika only to process a request for information by you or for marketing our products and services.

© Copyright Sika Services AG 2016

5.- ABOUT SIKAFLER® CALCULATION SOFTWARE

Engineered by:

Cype Software - Eusebio Sempere, 5 - 03003 Alicante (Spain)
www.cype.com