



## **Sika–Trocal Single Ply Membrane Systems for New and Refurbishment Roofing**

- ▲ **Waterproof**
- ▲ **Durable**
- ▲ **Easy Design and Detail**
- ▲ **Fast Installation**
- ▲ **Fire Resistant**
- ▲ **Traffickable**

# Sika-Trocal Roofing Concepts

## ▲ Distribution Centres



Wal-Mart Asda – Lutterworth, Leicestershire



Tesco Plc – Middlewich, Cheshire

## ▲ Retail Developments and Stores



J Sainsbury Plc – Plymouth



Wm Morrison Plc – Blackpool

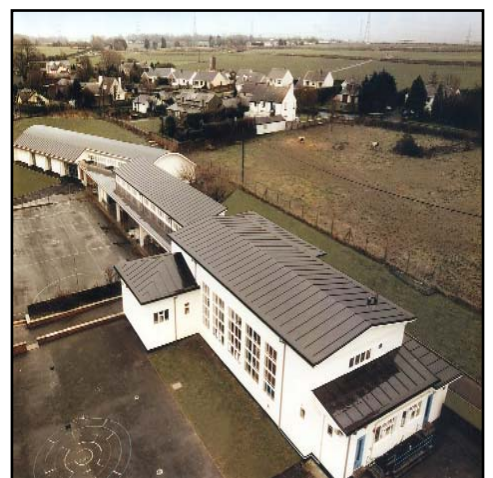


Tesco Plc – Kingston Park, Newcastle

## ▲ Health and Educational Buildings



St Patrick's Hospital – Dublin



Sagestone Primary School – Tenby, Wales



# for Buildings and Structures

## ▲ Leisure Facilities (Sports Halls, Stadiums, Entertainment etc)



Commonwealth Stadium – Manchester



Nottingham County Cricket Ground – Nottingham



David Lloyd Leisure Centre – Dublin

## ▲ Commercial, Residential & Public Developments (Housing, Offices, Cultural etc)



Visitor Centre – Lands' End



Spice Quay – London



The Pavillion – Matlock Bath, Derbyshire

## ▲ Industrial Premises (Laboratories, Development, Production)



Jaguar Technical Centre – Whitley



Müller Factory – Market Drayton



BA Aircraft Hangars – Heathrow

# Sika–Trocal Single Ply Membranes

## ▲ Flat, Pitched or Curved

**Sika–Trocal** membrane systems can be flat for economy and performance, plus their versatility allows the Architect to design fully seamless and waterproof vertical and curved surfaces. This flexibility allows complex refurbishment projects to be undertaken easily.



Kings Church – Catford, London



Brewhouse Theatre Art Centre –  
Taunton, Somerset



The Coopers School –  
Bicester, Oxfordshire

## ▲ Exposed or Covered

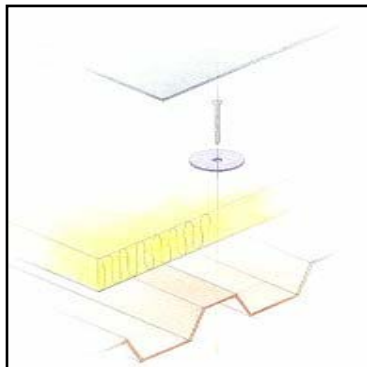
**Sika–Trocal** membrane systems include specific products designed for ‘fully exposed’ or ‘covered/buried’ installations. It is important to note that these two types of requirement need very different membrane properties, i.e:

- ▲ Exposed – requires high UV light resistance
- ▲ Covered/buried – requires good anti–bacterial properties.

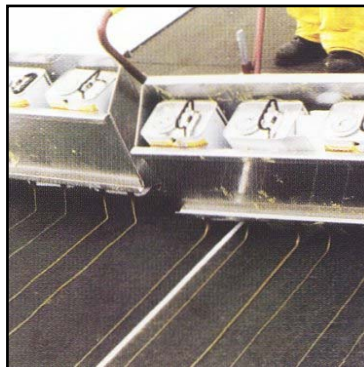
Owing to chemical reasons, these characteristics can not be optimised in the same membranes. However, **Sika–Trocal** has specifically designed membrane system solutions for each of these fundamental requirements.

## ▲ Restraint/Fixing Method

An advantage of the **Sika–Trocal** range of single ply membrane systems is that the most appropriate restraint or fixing can be selected for each project or even different parts of a project. For example, mechanical fixing for new structural steelwork, adhesive bonding for refurbishment (i.e over substrates with hidden electrical, mechanical or water services), and directly loaded in ballasted roofs and roof gardens etc.



Mechanical fixing



Adhesive bonding

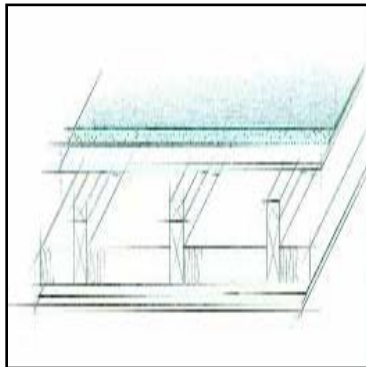


Ballasted

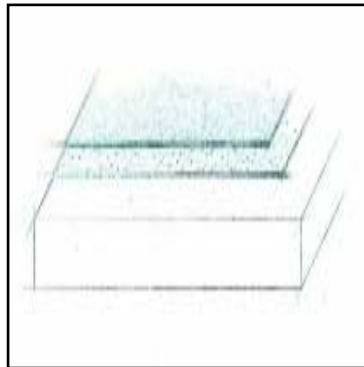
# for Different Types of Roof Construction

## ▲ Substrates

The versatility of the **Sika–Trocal** range, with mechanically fixed, adhered or ballasted restraining methods, means that almost all kinds of substrate can be easily and successfully waterproofed. Suitable substrates include steel, concrete, timber and other existing roof finishes, such as deteriorated and traditional bitumen and felt materials.



Timber substrate



Concrete substrate



Deteriorated existing felt substrate

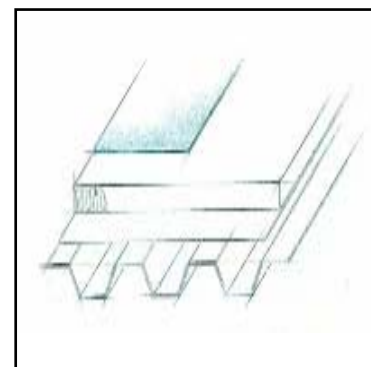
## ▲ 'Built Up' and 'Composite' Systems

**Sika–Trocal** are the only 'full range' single ply roof membrane system suppliers. In addition to market leadership in advanced 'built up' single ply roofing systems, we are also the market and waterproofing technology leaders in the field of membrane faced composite panels. This is a result of our Group philosophy of cultivating selective strategic partnerships.

In many applications the structure can only be successfully waterproofed using a 'built up' system approach. In others both 'built up' and 'composite' options can be equal in cost and programme time – so other selection criteria must be considered including:

- ▲ the extent of 'standard' open areas of roof
- ▲ the number of penetrations
- ▲ the site storage and craning arrangements
- ▲ the intricacies of the design details
- ▲ the complexity and coordination of the roof membrane/system connections with other elements of the structure (walls, gutters, steel, plant etc)
- ▲ the overall site programme (how soon the following trades require waterproof access below etc.)

Therefore, using the **Sika–Trocal** range and experience, the best solution can be 'tailor-made' for your project.



Traditional 'built up' system



Composite panel system



# Sika-Trocal Single Ply Roofing

## ▲ Waterproof

For the primary function of a roof to be waterproofing may be obvious – BUT this is still the main cause of roofing problems!

**Sika-Trocal** fully welded and tested, seamless systems avoid potential leaks and ensure a watertight solution for whatever your design intentions.

The name **Sika**® is synonymous with waterproofing and has been since 1910 in Switzerland and 1926 in the UK and Ireland.

## ▲ Durable

Durability and reliability is ensured with **Sika-Trocal** tried and tested UV resistant and anti-bacterial systems. Today **Sika-Trocal** roofs have been successfully installed for more than 30 years in the UK (since 1972) and more than 40 years (since 1962) in Europe, far longer than **any** other single ply roof membrane manufacturer!

## ▲ Easy and Fast Installation

**Sika-Trocal**'s patented 'discrete disc' fastening and welding system is undoubtedly the quickest and simplest method of single ply membrane installation on site (i.e. the standard **Trocal 'S'** mechanically fixed system).

On large open roofs, seam fastened, hot air welded systems (i.e. **Sikaplan VG**) are also fast and available from **Sika Limited**.

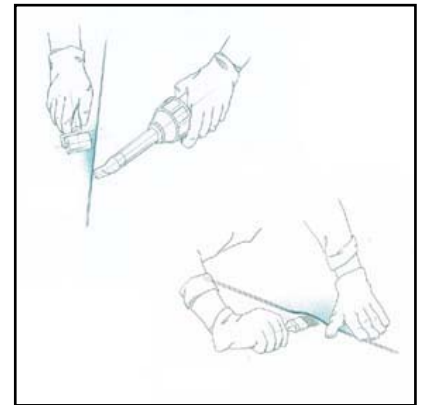
## ▲ Extensive Independent Approvals

The **Sika-Trocal** range of single ply roofing membranes comes with an exhaustive list of independent national and international technical approvals.

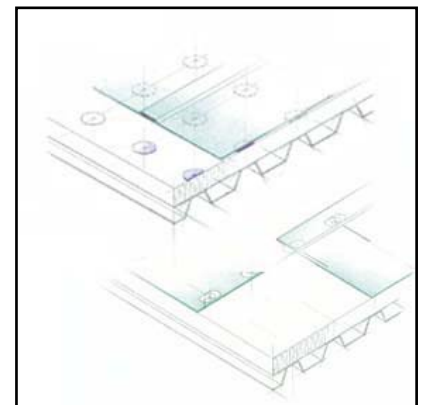
These include:

- British Board of Agrément
- Swiss SIA 280
- German DIN 16730/16735
- French Avis Technique
- American FM (Factory Mutual)

All **Sika-Trocal** membranes are manufactured in our own plants, fully in accordance with ISO 9001 Quality Assurance and ISO 14000 Environmental Management systems.



Hot welding and cold welding



Disc fastening system



Approvals

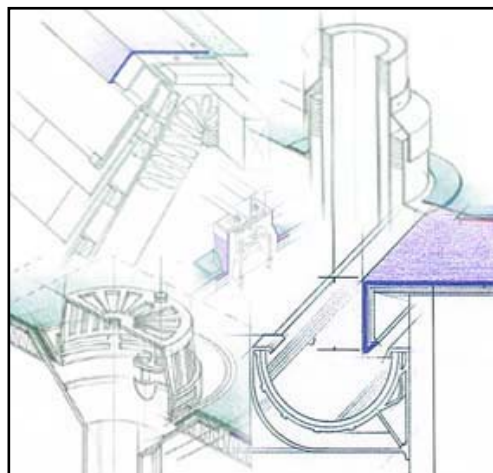
# Membrane Properties for Success

## ▲ Easy Design and Detailing

One of the biggest areas of risk in roofing is in the connection of the membrane to the ancillary details.

Full **Sika-Trocal** purpose-designed fixing systems with standard connection details are available. (CAD on request.) Extremely simple connection is possible to all ancillary details including gutters, gullies, rooflights, walkways etc.

From more than 40 years of experience we always have solutions to meet the designer's needs. Most importantly they are also practical and readily achievable on site!



Various details

## ▲ Fire Resistant

**Sika-Trocal** membranes have been extensively tested to exhaustive national and international fire standards including:–

Britain	BS 476 Part 3
America	ASTM E108
Germany	DIN 4102 Pt 7
Switzerland	SIA 183–2
Nordic	Nord Test 006
France	M1, M2 and M3
Belgium	EN 1187–1

Once again this is far more than for any other single ply or liquid roofing system manufacturer!

Note: When tested in accordance with BS 476: Part 3: 1958 (1975 not relevant) most warm roof build-ups will achieve an AA or AB rating with **Sika-Trocal** single ply roof membranes. These ratings permit unrestricted usage under the UK Building Regulations 2003.



Fire damaged roof – only the Sika-Trocal membrane remains!

## ▲ Traffickable

Infrequent general roof maintenance traffic across the roof is possible and acceptable.

Access points and frequently used routes, such as roof mounted plant, will require installation of **Sika-Trocal** walkway surfacing material, along with underlying reinforcement to protect the insulation. Full design and installation details are available from **Sika Limited**.



Demarcation of walkways

# Sika-Trocal Concepts – Systems

## ▲ Sikaplan VG

**Sikaplan VG** is the most cost effective reinforced membrane for use on mechanically fixed flat, curved and pitched roofs. It is hot air welded and particularly suitable for the large flat roofs on distribution centres, for example.



Lancaster Audi – Liverpool

## ▲ Trocal S

**Trocal S** is homogeneous and is the fastest single ply membrane in application with its patented discrete disc fixing system. It provides the best cost performance for almost all types of single ply roofing including flat, pitched, vertical and curved roofs. It is mechanically fixed and is ideal for use on both new and refurbishment projects where quality, time and overall cost are of the essence!



Sainsbury Millennium Village – Greenwich



# for New and Refurbishment Works

## ▲ Trocal SGK

**Trocal SGK** is the best cost performance bonded membrane for use on all types of substrate. It is particularly designed for use on concrete, and in refurbishment projects with buried or hidden mechanical and electrical services, etc.

The fully bonded **Trocal SGK** system is also ideal for use on cold stores where absolutely no 'cold bridging' or 'thermal bridging' from mechanical fixings is allowed.



Tesco Cold Store – Dublin

## ▲ Trocal SGmA

The best cost performance restrained membrane which is specifically designed for ballasted roofs and roof gardens which are becoming increasingly popular, not least for environmental reasons. **Sika–Trocal** have long and extensive experience in this field.

UV stabilisers are omitted and anti-bacterial protectants are added in the membrane formulation for durability under ballast or green roof installations. It is not always recognised by some membrane manufacturers, who promote 'standard use membranes' for both exposed and buried applications, that the necessary anti-bacterial agents are attacked and destroyed by the UV light stabilising additives! Therefore, the same membranes should not be used for both types of installation.

**Sika–Trocal** provide technically correct 'tailor-made' solutions for each of our clients' requirements.



Fitzwilliam Hotel Roof Garden – Dublin

# Sika–Trocal Roofing Concepts

## Global Case Studies

### ▲ Philips Technical Centre – Eindhoven, Holland

#### Requirement:

It had become necessary to renovate the 30–year old roof. The original design was a steel and timber frame with a fully bonded membrane system on top, to create a distinctive, futuristic dome construction.

#### Solution:

Having assessed various technical options, Philips selected a mechanically fixed membrane system from **Sika–Trocal**. This was able to satisfy the very high aesthetic requirements, as well as being practical and cost effective.



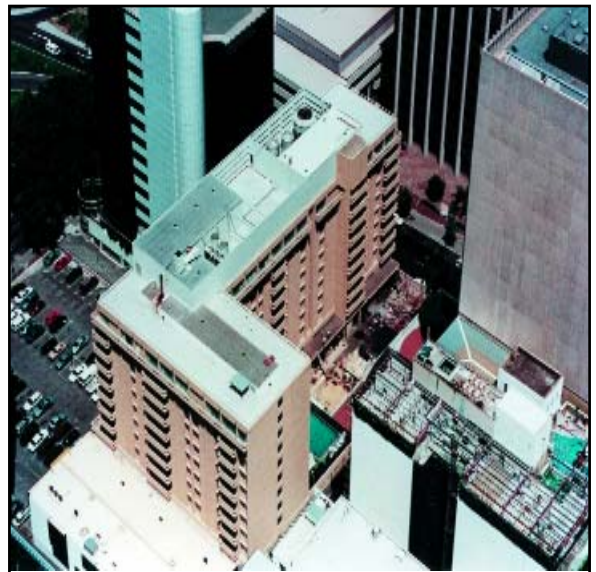
### ▲ Parmelia Hilton Hotel – Perth, Australia

#### Requirement:

Replacement of failed original bituminous roofing felt and provision of durable protection in an aggressive coastal location.

#### Solution:

**Sika–Trocal** PVC membrane especially designed for high performance in severe conditions. **Sika**® Australia was able to supply all the protective systems required for the entire building envelope – coatings, joint sealants and the **Sika–Trocal** roofing membrane.



# Sika–Trocal Roofing Concepts

## Global Case Studies continued/...

### ▲ Köln Arena – Cologne, Germany

#### Requirement:

The roof to the gigantic Köln Arena Hall has a surface area of 17,000 m<sup>2</sup> and is at a height of 42 m above the ground. As well as shielding the hall against the weather, the roof must protect the surrounding neighbourhood from excessive noise emanating from within the hall.

#### Solution:

The roof is a 'sandwich' construction using sound insulation strips and thermal insulation boards, with a **Sika–Trocal** PVC membrane mechanically fixed to the surface, ensuring long-term weatherproofing and watertightness.



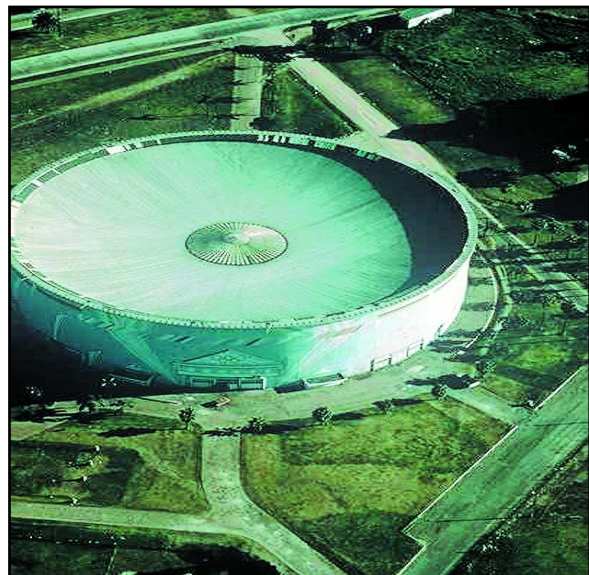
### ▲ Hector A. Grauert Stadium – Montevideo, Uruguay

#### Requirement:

Commonly known as "The Cylinder", this basketball stadium was constructed from reinforced concrete, 25 m high and 95 m in diameter, producing a concave structure with an area of 6,600 m<sup>2</sup>. The traditional bituminous felt roof system cracked and needed frequent repairs, so a long-term solution was sought.

#### Solution:

A permanently flexible PVC membrane from **Sika–Trocal** was specified to cater for the large movements of the roof. This was successfully installed in just 32 days, including preparation and cleaning of the substrate, and is still providing total watertightness over 16 years later.





# Sika–Trocal Roofing Concepts

## Global Case Studies continued/...

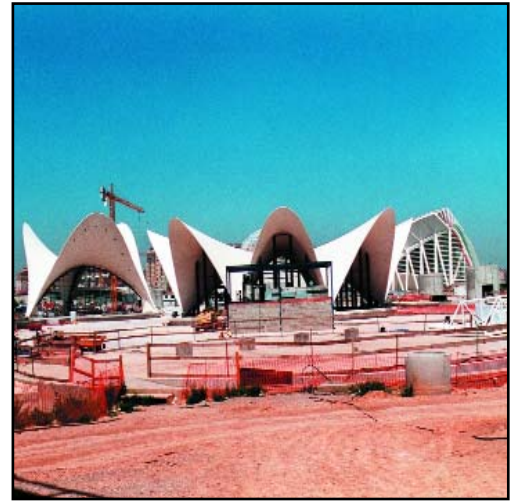
### ▲ City of the Arts & Sciences – Valencia, Spain

#### Requirement:

Designed by the renowned architect Felix Candela, The Oceanographic Museum at the City of Arts & Sciences is composed of 11 buildings located around the perimeter of an artificial lake, forming an underwater city showing all the oceans of the world, interconnected above and below ground. Clearly, waterproofing is very important in this complex.

#### Solution:

**Sika**<sup>®</sup> Spain supplied around 25,000 m<sup>2</sup> of PVC roof membranes for surface roofs and for ballasted roofs, ensuring excellent long-term weatherproofing.



### ▲ Samsung–Tesco, Home Plus Warehouse – Mokcheon, South Korea

#### Requirement:

Tesco, in partnership with Samsung, wanted to build a 57,000 m<sup>2</sup> warehouse in South Korea. UK architect Smith Smalley was in charge of the design and wanted 100% confidence in the roof waterproofing system.

#### Solution:

Based on successful UK Tesco experience dating back to 1977, **Trocal S** was specified. As **Sika**<sup>®</sup> Korea was inexperienced in membrane roofing, the local Korean contractor was trained by **Sika–Trocal** at the CITB, and given technical support during a series of visits from **Sika–Trocal** Technical Engineers from Welwyn Garden City.



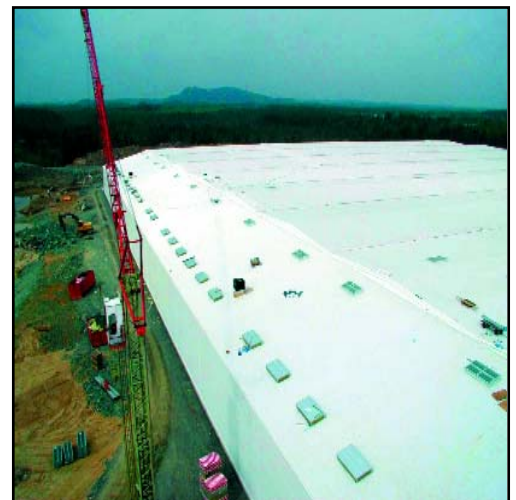
### ▲ IKEA Warehouse – Torsvik, Sweden

#### Problem:

IKEA was constructing a 50,000 m<sup>2</sup> warehouse, with work starting in January and temperatures often as low as –15°C. In addition, a more durable alternative to previously problematic bituminous roofs was sought.

#### Solution:

**Sika–Trocal** was able to provide the ideal solution – a PVC membrane offering fast, reliable installation in cold weather. Moreover, the membrane fulfilled the very high ecological standards that prevail in Sweden. IKEA was so satisfied that **Sika–Trocal** subsequently supplied materials for a 64,000 m<sup>2</sup> extension.



# Sika–Trocal Roofing Concepts

Some high profile UK references

## ▲ Distribution Centres



Tesco Plc – Middlewich, Cheshire



Wal-Mart Asda – Lutterworth, Leicestershire

## ▲ Retail Development and Stores



Trafford Centre – Manchester



Tesco/Hoover Building – Greenford, Middlesex

## ▲ Health and Educational Buildings



St Martin's College – Lancaster



St George's Hospital – Bristol



# Sika–Trocal Roofing Concepts

Some additional high profile UK references

## ▲ Leisure Facilities



Commonwealth Stadium – Manchester



Bells Sports Centre – Perth

## ▲ Commercial, Residential and Public Buildings

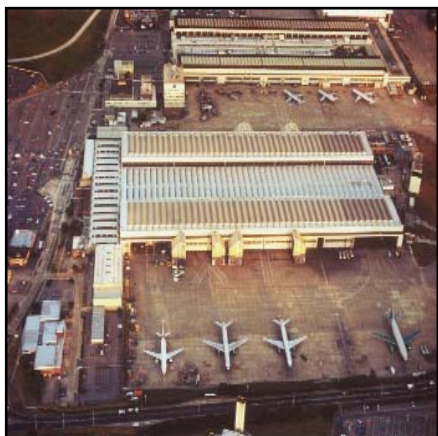


National Marine Aquarium – Plymouth



Gatwick Airport – North Terminal

## ▲ Industrial Premises



BA Aircraft Hangars – Heathrow



Jaguar Technical Centre – Whitley



# Technical and Customer Service

- ▲ **Competence – Sika–Trocal have the best brand names and provide the best service and advice in single ply roofing! – Try it yourself.**

Call for Technical and Customer Service on 01707 394444 (Ireland: (01) 8620709) to request our full technical documentation or ask for assistance from one of our Area Managers and convince yourself.

- ▲ **Market leaders with unbeatable track record**

**Sika–Trocal** produce the only single ply roofing membranes with more than 30 years success in the UK and more than 40 years in Europe. We are the clear market leader throughout Europe.

- ▲ **Most extensive roofing references in the UK and Ireland**

**Sika–Trocal** have the most extensive references and the largest number of square metres of single ply roofing membrane successfully installed on roofs in the UK and Ireland – Why not ask to visit some near you!

- ▲ **Quality installation using only Sika–Trocal licensed contractors**

All **Sika–Trocal** contractors are licensed and are trained at the CITB to the highest standards in the industry.

- ▲ **All projects monitored**

Every single **Sika–Trocal** membrane installation from design to completion is monitored by our own in–house Technical Service Engineers. Additional maintenance and inspection services are available on request.

- ▲ **Guaranteed – We fully warrant our products!**

**Sika–Trocal** do not have fancy small print or unpronounceable and uncontactable insurers. We simply guarantee our products to suit you and your Client's requirements.

- ▲ **Environmental Management**

**Sika–Trocal** have full ISO 14000 certification.



All **Sika–Trocal** membranes can be recycled into further roof membranes (using Advanced Closed Loop Recycling) at the AfDR plant near Cologne. This plant opened in 1993 and **Sika–Trocal** is the major shareholder in this facility.

- ▲ **Single Ply Roofing Association**

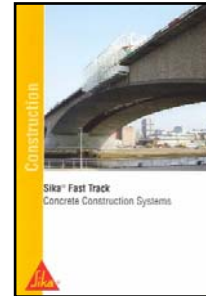
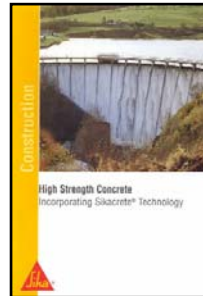
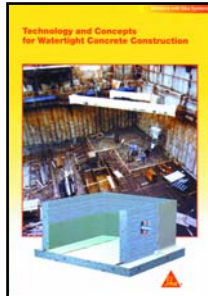


**Sika–Trocal** are active members of SPRA, the Single Ply Roofing Association.

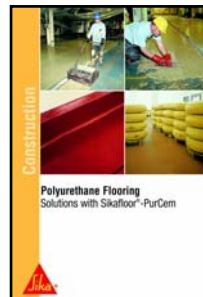
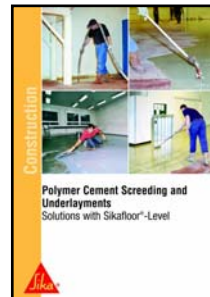
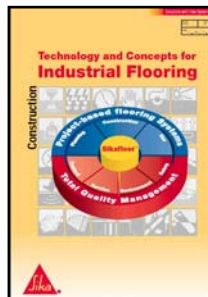
# Sika–Trocal Single Ply Membrane Systems for New and Refurbishment Roofing

Also Available from Sika®

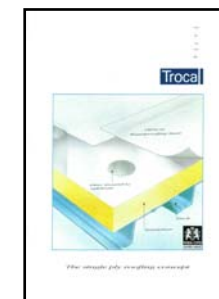
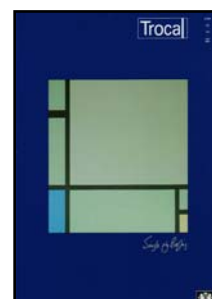
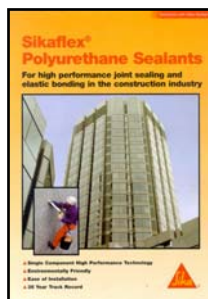
## Concrete Series



## Flooring Series



## Joint Sealing & Cladding Series



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