



Tough. Resilient.



P.V.C. Wiring Pipes, Channels and Fittings
with *double* life.



Part - 3

konseal®

P.V.C. Wiring Pipes, Channels and Fittings

From an ISO Certified Company

www.konseal.com


Tough. Resilient.

The **konseal**[®] range of high quality PVC products are brought to you by TUBES & TUBINGS, an ISO Certified unit and one of South India's top manufacturing houses. **konseal**[®] specializes in PVC wiring pipes, Fittings and PVC Channels. **konseal**[®] has become the product of choice for responsible engineers and quality conscious end-users alike. With its highly organised network of dealers and capacity of over 1000 metric tons per annum, it is not surprising that **konseal**[®] rules for wide spread availability, reliability and affordability. Like the material that **konseal**[®] dedicates itself to PVC, the company has proven itself to be tough enough to withstand market pressures - and resilient enough to adapt to all kinds of market conditions.



Only virgin PVC goes into the making of **konseal**[®] - offering better quality, better fire resistance, and better shock resistance and 100% recyclable, thus making it environment friendly.

konseal[®] PVC Conduits. Shock-proof your life.

konseal[®] PVC Conduits conforming to IS:9537 are perfect for electrical applications, because of PVC's resistance to breakdown under high electrical voltage. It is also a poor conductor of electricity. **konseal[®]** range of conduits are resistant to weathering, chemical rotting, corrosion, shock and abrasion. Manufactured on fully automated machines, **konseal[®]** PVC Conduits are made of impact modifying, insulating compounds, mixed at 140°C in high speed mixers. With stringent quality control measures in place, it is no wonder that the product meets BIS Standards and is  certified.













konseal[®] PVC Conduit Specifications:

| Size | Outside Diameter | Tolerance on outer Diameter | Inside Diameter | | | Wall Thickness | | | Standard Length (Meters) |
|------|------------------|-----------------------------|-----------------|--------|--------|----------------|--------|--------|--------------------------|
| | | | Light | Medium | Heavy | Light | Medium | Heavy | |
| 16 | 16mm | -0.3mm | 13.7 mm | 13mm | 12.2mm | 1.0mm | 1.35mm | 1.75mm | 3 |
| 20 | 20mm | -0.3mm | 17.4mm | 16.9mm | 15.8mm | 1.15mm | 1.4mm | 1.95mm | 3 |
| 25 | 25mm | -0.4mm | 22.1mm | 21.4mm | 20.6mm | 1.25mm | 1.6mm | 2.0mm | 3 |
| 32 | 32mm | -0.4mm | 28.6mm | 27.8mm | 26.6mm | 1.5mm | 1.9mm | 2.5mm | 3 |
| 40 | 40mm | -0.4mm | 35.8mm | 35.4mm | 34.4mm | 1.9mm | 2.1mm | 2.6mm | 3 |
| 50 | 50mm | -0.5mm | 45.1mm | 44.3mm | 43.2mm | 2.2mm | 2.6mm | 3.15mm | 3 |
| 63 | 63mm | -0.6mm | 57.0mm | - | - | 2.7mm | - | - | 3 |

konseal[®] PVC Conduits - Packing quantity per bundle

| Item | Meters | Lengths |
|-------|--------|---------|
| 16 mm | 450 | 150 |
| 20mm | 300 | 100 |
| 25mm | 150 | 50 |
| 32mm | 75 | 25 |
| 40mm | 75 | 25 |

Periodical Quality Tests

| | Name of test | Nature of test |
|---|--------------------------------|---|
|  | Test of marking | The marking shall be indelible by petroleum sprit. |
|  | Test of inner diameter | The inner diameter shall be verified by means of a GO gauge |
|  | Test of minimum outer diameter | The minimum outer diameter shall be measured by means of a NO GO gauge. |
|  | Test of maximum outer diameter | The maximum OD shall be measured by means of a GO gauge. |
|  | Resistance to burning | When subject to a high intensity flame for 30 seconds, the conduit shall not burn by itself, after removing the flame. |
|  | Resistance to heat | The Conduit is subjected to 60°C in a hot air oven and the resistance to heat is measured by means of the testing apparatus. |
|  | Compression test | Force in the range of 125 N to 1250 N is applied depending on the class of conduit by means of the compression test apparatus. The dimensions should comply with the standards after release of compression pressure. |
|  | Bending test | Bending test is conducted, by bending with the aid of spring and test apparatus, to 180 degrees. No cracks should appear after the test. Samples, which are cooled up to -5°C are also subject to the same test |
|  | Insulation test | The conduits are tested for insulation at minimum 500 mega ohms. |
|  | High voltage test | The conduits are subject to 2000 V AC by means of the test apparatus. No break down shall occur during the test. |

Approvals

konseal[®] has won approvals from Government departments like
| PWD (Govt. of Kerala) | CPWD (Govt. of India) | Directorate General of
Supplies & Disposal (Govt of India) | Indian Railways | BSNL | Military
Engineering Service | Cochin Port Trust | Cochin International Airport
Ltd. (CIAL).

Various associations like | Kerala Electric Traders Association (KETA)
| Kerala Electric Wiremen and Supervisors Association (KEWSA)
| AKLSWA and ESLWA too have recommended **konseal**[®].

ISO Certification

Tubes & Tubings has become an ISO Certified unit in October 2004.
Certification was done by Intertek Certifications Limited, UK under UKAS
accreditation, which is one of the prestigious accreditation boards
worldwide.

Conduit Installation - Methods

Surface Installation

In surface installation, the conduit is fixed using saddles or spacer bar
saddles. The maximum recommended spacing between the saddles is 1.0
m for the horizontal conduit runs and 1.25 m for vertical conduit runs.
Saddles should be fixed 20 cm on either side of bends or boxes. As PVC
conduit expands, with increasing temperatures, for expansion/contraction
movements in long straight runs, the use of an expansion coupling is
recommended every 6 m to absorb expansion and avoid conduit buckling.

Conduit Cable Capacities

Single-core PVC - insulated cables in straight runs of conduit not exceeding 3m in length.

For each cable, it is intended to use, obtain the appropriate factor from Table A.

Add all the cable factors so obtained and compare with the conduit factors given in Table B.

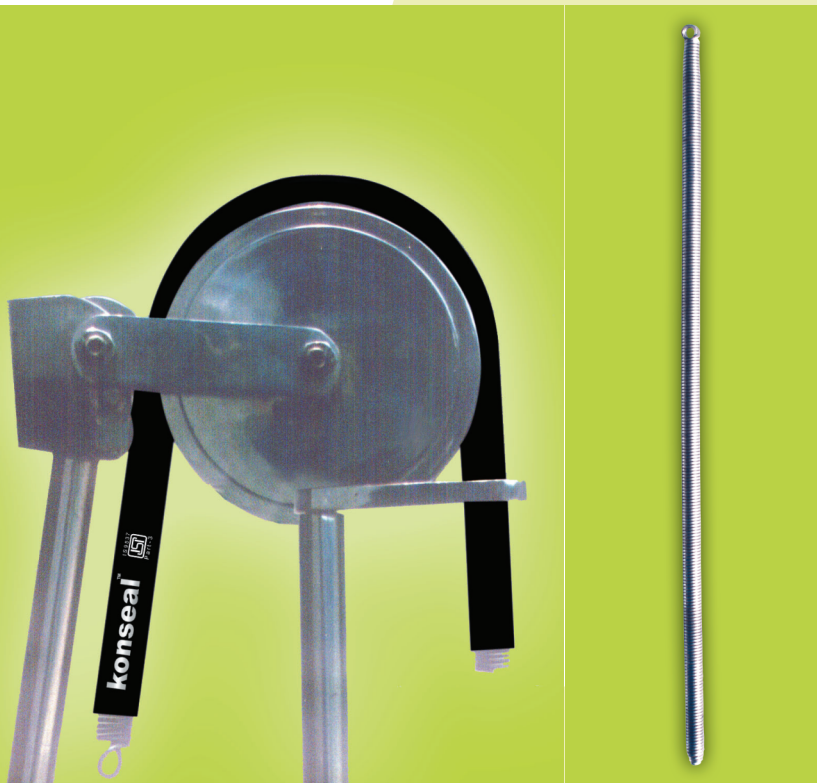
The conduit size, which will satisfactorily accommodate the cables, is that size having a factor equal to or exceeding the sum of the cable factors.

Single-core PVC - insulated cables in straight runs of conduit exceeding 3m in length or in runs of any length incorporating bends or sets.

For each cable, it is intended to use, obtain the appropriate factor from Table C.

Add all the cable factors so obtained and compare with the conduit factors given in Table D, taking into account the length of run it is intended to use and the number of bends and sets in that run.

The conduit size, which will satisfactorily accommodate the cables, is that size having a factor equal to or exceeding the sum of the cable factors.



Conduit bending with the aid of spring and test apparatus.


Bending Spring


Bending

Bending of conduit up to 25 mm diameter can be carried out cold, using the correct bending spring size, according to the diameter and the gauge of the conduit. After inserting, the bend can be made by hand or across the knee, by bending slightly beyond the required angle, and allow the conduit to recover back to the required position. The bending should not be done too fast and once made a bend should not be forced backwards, as this action can lead to conduit or spring damage. According to IEE regulations, the bend inner radius should not be less than 2.5 times the conduit's outside diameter.

For conduit sizes over 25 mm diameter, hot bending is required with the same procedure as cold bending, but with the application of gentle heat just before bending. No open flame should be used for heating, rather a hot air torch or hot water. Once the conduit is warm, it can be bent around a suitable former and held there until it cools down and sets in position.

konseal[®] **PVC Conduit Fittings: Pure and Perfect**





konseal[®] range of  PVC conduit fittings conforming to IS : 3419 are manufactured in 100% PVC, that too virgin. Hence these fittings are 100% safe, durable and resistant to fire and electric shock. They also withstand temperature up to 60 degree Celsius and voltage up to 2000 Volts. **konseal[®]** Junction Boxes are fitted with rust free stainless steel screws. These features make **konseal[®]** PVC Conduit Fittings perfect and un-comparable.


IS:3419  **Spout type Circular Box - One way (with lid)**

| Size (mm) | Colours | |
|-----------|---|---|
| | Black | Ivory |
| 20 |  |  |
| 25 |  |  |



IS:3419  **Spout type Circular Box - Two way (with lid)**

| Size (mm) | Colours | |
|-----------|---|--|
| | Black | Ivory |
| 20 |  |  |
| 25 |  |  |



IS:3419  **Spout type Circular Box - Three way (with lid)**

| Size (mm) | Colours | |
|-----------|---|---|
| | Black | Ivory |
| 20 |  |  |
| 25 |  |  |



IS:3419  **Spout type Circular Box - Four way (with lid)**






| Size (mm) | Colours | |
|-----------|---|--|
| | Black | Ivory |
| 20 |  |  |
| 25 |  |  |



konseal[®]  IS:3419 PVC Conduit Fittings

IS:3419  **Spout type Circular Box (DEEP)**

One way with lid

| Size (mm) | Colours | |  |
|--------------|---|---|---|
| | Black | Ivory | |
| 20 |  |  | |
| 25 |  |  | |


Two way with lid

| Size (mm) | Colours | |  |
|--------------|---|---|---|
| | Black | Ivory | |
| 20 |  |  | |
| 25 |  |  | |






Three way with lid

| Size (mm) | Colours | |  |
|--------------|---|---|---|
| | Black | Ivory | |
| 20 |  |  | |
| 25 |  |  | |






Four way with lid

| Size (mm) | Colours | |  |
|--------------|---|---|---|
| | Black | Ivory | |
| 20 |  |  | |
| 25 |  |  | |

ELBOW











| Size (mm) | Colours | |  |
|--------------|---|---|---|
| | Black | Ivory | |
| 20 |  |  | |
| 25 |  |  | |


TEE

| Size (mm) | Colours | |  |
|--------------|--|---|---|
| | Black | Ivory | |
| 20 |  |  | |
| 25 |  |  | |


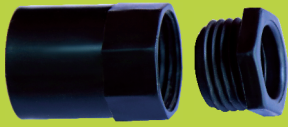


konseal® ^{IS:3419}  PVC Conduit Fittings

^{IS 3419}  **SLIP TYPE COUPLING BEND**

| Size (mm) | Colours | |
|--------------|---|---|
| | Black | Ivory |
| 16 |  |  |
| 20 |  |  |
| 25 |  |  |
| 32 |  |  |
| 40 |  |  |



ADAPTER

| Size (mm) | Colours | |
|--------------|---|--|
| 20 |  |  |
| 25 x 20 |  |  |



Channels with **Double Locking** system

konseal[®] PVC Channels. Get connected - and protected!

Unsightly computer cables, intercom and EPABX cabling can be securely and aesthetically routed through **konseal**[®] range of PVC channels. Manufactured to international standards **konseal**[®] PVC Channels are long lasting, working efficiently. These channels offer the snap locking facility and withstands temperature up to 60° C and Voltage up to 2000 volts. They are also fire and impact resistant. All these features make **konseal**[®] PVC Channels extra ordinary special.

konseal[®] PVC Channels are available in sizes of 12/20mm, 20/25mm, 25/32mm & 35/38mm.

| Channels | | |
|-----------|-----------------------|----------|
| Size (mm) | Standard Length Mtrs. | PCS/Pack |
| 12/20 | 2.00 | 150 |
| 20/25 | 2.00 | 100 |
| 25/32 | 2.00 | 50 |
| 35/38 | 2.00 | 50 |

Dimension

12/20 Channel



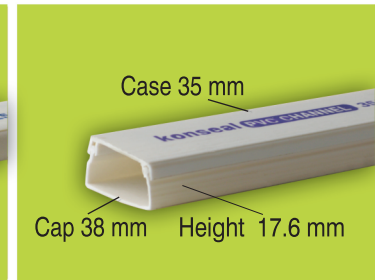
20/25 Channel



25/32 Channel



35/38 Channel



Description

konseal[®] Channels consist of clip-on lid. It is fitted to the body simply by pressing it along its front face. The lid is removed by lifting it from the body at one end and then simply peeling it away. The lid closing mechanism is designed to give a securely closed installation, yet easily accessible for maintenance or modifications. International standards stipulate a maximum of 45% of the inside space of channels that can be occupied by cables.

Fixing

Holes are drilled on the base of the body. It is mechanically fixed to the desired surface using flat head screws. The distance between the fixing centres should not be more than 40 cm. And it should be not more than 15 cm from the end of a straight run.

Jointing

A fine toothed tenon saw and mitre block should be used to cut the channels. This will ensure accurate clean cuts, leading to an easy and efficient installation. In all straight joints, it is important to stagger the joints of the channel body and lid to give a better protection and reduce joint visibility. On straight runs longer than 6 m, allowance for expansion must be made. For corners, the channels must be mitred and for T-joints it must be slotted for cable entry.

Our client list

APOLLO BUILDERS PVT. LTD., CALICUT

COCHIN INTERNATIONAL AIRPORT LTD.

COCHIN PORT TRUST

COCHIN SHIPYARD

CPWD. GOVT. OF INDIA

GODREJ AND BOYCE

HIRISE BUILDERS, THALASSERY

KANNUR INTERNATIONAL AIRPORT LTD.

KITCO

LANDMARK BUILDERS, CALICUT

MALABAR CANCER CENTRE, THALASSERY

MATHA AMRITANANDAMAYI MATH

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PWD. GOVT. OF KERALA

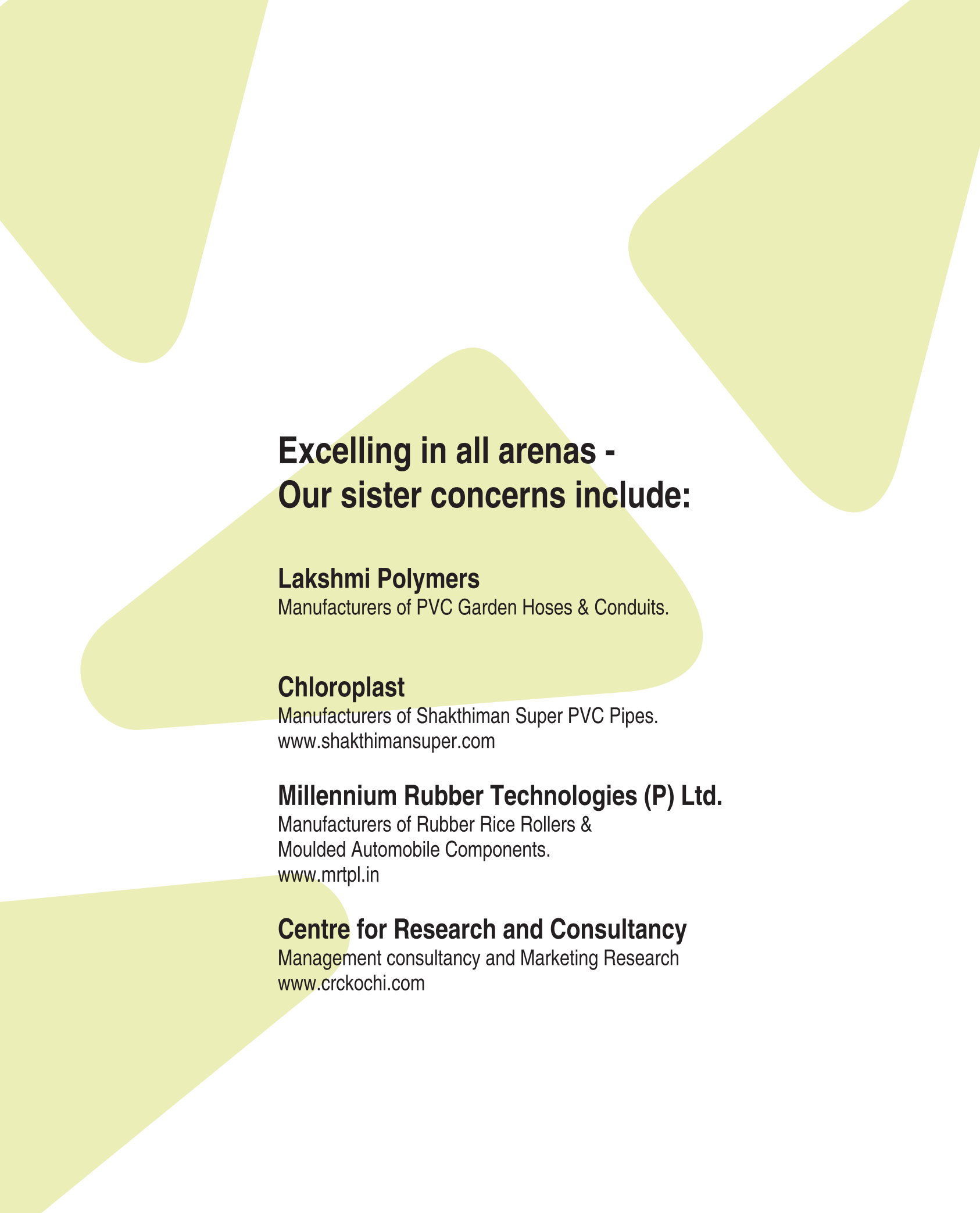
RAMADA HOTEL, TRIVANDRUM

RDS PROJECTS LTD.

SKYLINE BUILDERS

SOUTHERN RAILWAY

This list is not comprehensive.



Excelling in all arenas - Our sister concerns include:

Lakshmi Polymers

Manufacturers of PVC Garden Hoses & Conduits.

Chloroplast

Manufacturers of Shakthiman Super PVC Pipes.
www.shakthimansuper.com

Millennium Rubber Technologies (P) Ltd.

Manufacturers of Rubber Rice Rollers &
Moulded Automobile Components.
www.mrtpl.in

Centre for Research and Consultancy

Management consultancy and Marketing Research
www.crckochi.com



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