Residential Water Piping System using

# PexGol / MultiGol

## Installation Instructions

Third Edition

**Golan Plastic Products**

# Table of Contents




Written by Shmuel Yaniv, head of Residential Piping Systems Department, Golan Plastic Products Ltd.





Thanks to Gavriel Roggel - Marketing Manager, for his professional contribution and to Yossi Bar, for his engineering consultancy.

# General

This booklet describes the installation process of PexGol and MultiGol crossed - linked Polyethylene piping systems for indoor hot and cold water supply, based on the following Israeli Standards:

**1205:** Installation of Sanitary Systems and their testing
**5433 part 6:** Indoor hot and cold plastic piping systems - crossed-linked Polyethylene: Installation Instructions.
**2242:** Aluminum reinforced cross - linked Polyethylene pipes for the supply of hot and cold water: Installation Instructions.

The purpose of this Installation Instructions booklet is to deepen the knowledge and skill of professionals, working in the Sanitary Systems trade, serve as a guide in design, construction and supervision, emphasizing technical and quality issues based on the manufacturer's guidelines, the Israeli Standard Institute and the accumulated experience from few decades of field work.

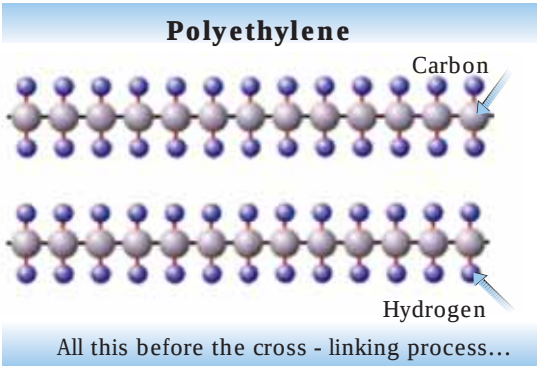
## Pipe

Water piping plays a crucial role in the quality and functionality of the (water supply) system performance, throughout its lifespan.
Golan Plastic Products makes cross - linked Polyethylene piping which withstands a maximum work temperature of 95 deg. C and pressure of 10 Atm., for 50 (fifty) continuous work years!
This durability in extreme conditions is achieved by the cross-linking process, ensuring the pipe's strength for many years of service.

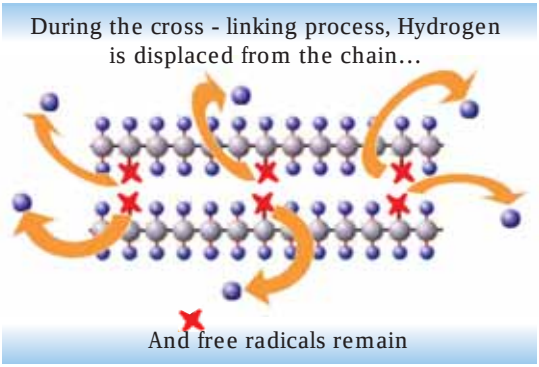
Pipes produced in Golan are of the "A" and "C" types cross-linked Polyethylene (PE). Inscription on the pipe's wall indicate its compatibility with official standards requirements and ensure its serviceability in hot water. It is important to read and understand the data written on the pipe, before installing it:
**PE-X A** - Cross-Linked Polyethylene of type A (Chemical Cross - Linking)
**PE-X A** - Cross-Linked Polyethylene of type C (Irradiation Cross - Linking)

The above A and C molecular cross-linkage has the advantage of being the strongest known Carbon - Carbon bondage. Another important and significant advantage (of pipes produce in Golan) is the fact that the cross - linking process is performed during production, compared to pipes from other manufacturers, where the cross-linking process only starts after the pipe is put to service and water flows through it. Those pipes are not made in Golan Plastic Products.

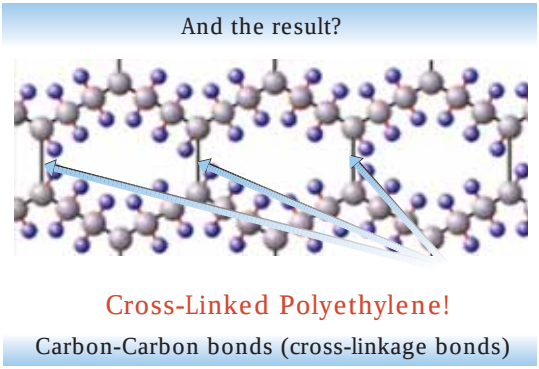
## The Cross-Linking Process




A PE chain made of Carbon and Hydrogen atoms - before the cross linking process




The Cross - Linking Process: Displacement of Hydrogen from the chain by Peroxides or by Irradiation.




The Cross - Linkage is completed by Carbon - Carbon bonds

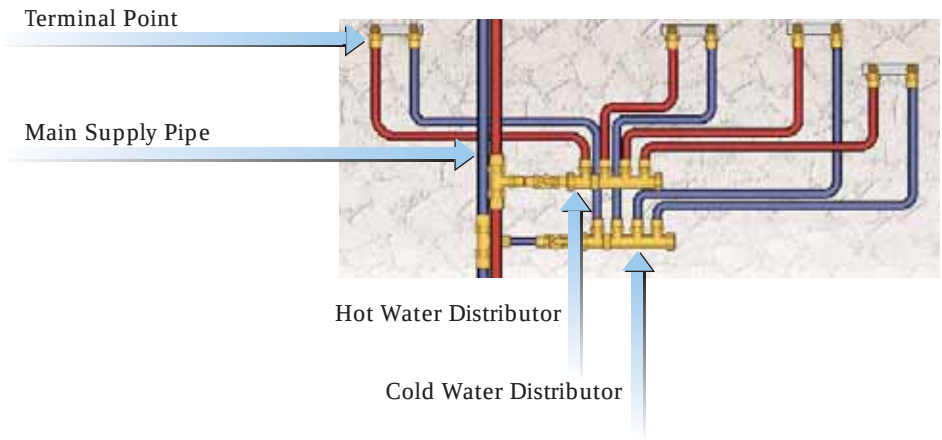
The strength and durability of the pipe in hot water (95C/10Atm.) is now ensured.

# The PexGol System

## The “Radial System” Principle

A Main Supply Pipe is terminated by a Water Distributor (Manifold).
Individual pipes branch from the Distributor and supply water to each terminal point separately, without any connections or splitting along the pipe line.

## Radial (”Parallel”) Water Supply System



## PexGol - Definitions

**Pipe:** A pipe for supplying hot or cold water.
**Conduit Pipe:** A pipe, having an inner diameter larger than the (outer) diameter of the pipe which serves as hot or cold water supply line, threaded into it.
**Terminal Point:** 105º Socket or an external elbow, facilitating connection to pipe's end.

**Plastic Housing:** Houses a 105º Socket inside it.
**Brass Bolts/Nuts:** Facilitate the fixing of a 105º Socket onto a Plastic Housing.
**Water Distributor:** A Manifold, distributing pipes to all domestic Outlet Points (hot or cold) and to which the Main Supply Pipe is connected.
**Distribution Cabinet:** A cabinet for housing the Distributors (manifolds).

Water Distributor

Integral Elbow

Plastic Housing

Terminal Point: 105º Socket

## Manufacturer's Directives

The Installer should pay attention to the following details and directives included in Golan's Technical Catalog:

- Dimensions of piping and accessories
- Storage instructions for pipes
- Tools required for installing piping and accessories
- Installation workmanship
- Combination of different materials, accessories and piping
- Conditions of use: Temperatures and Pressures

## Design Drawings

The System will be installed according to drawings, prepared by a Sanitary Designer or by Golan Plastic Products Ltd. and approved by a Sanitary Designer only.

## System Installation

The PexGol System will be installed in one of the following methods:

• Exposed Installation • Exposable Installation • Concealed Installation

In the Exposed or Exposable methods, the piping will be installed with Fixpoint Clamps, attaching the piping to the building's structure.

The distances between (adjacent) clamps are given in Table 1, below:

| Maximum distance between hot/cold piping clamps in cm | | |
|---|---|---|
| Pipe Diameter (mm) | Vertical Installation | Horizontal Installation |
| 50 | 70 | 16 |
| 60 | 80 | 20 |
| 70 | 90 | 25 |
| 80 | 100 | 32 |
| 100 | 130 | 40 |

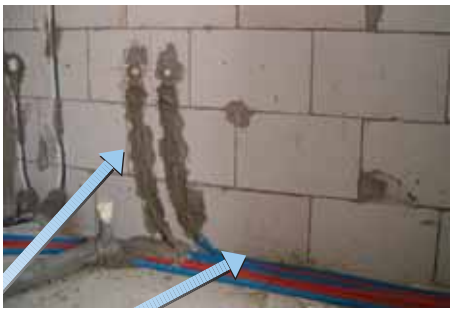
## Exposed Installation of PexGol Piping

Piping with a red or blue conduit pipe should not be installed in areas exposed to sunlight.

Exposed Installation

## Concealed Installation

Installation of concealed piping, having a diameter below 25 mm should be with a conduit pipe. A 32 mm pipe will be installed without a conduit pipe. Pipes in the system should be installed in parallel (no crossing allowed). Each terminal point should be directly connected to the distributor, with no additional connectors. The conduit pipes should be of a flexible type, allowing threading of pipes and easy extraction.



Concealed Installation

## Conduit Pipes Diameter in Concealed Installation

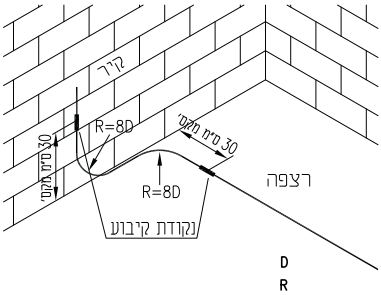
| Conduit Pipes Diameter in Concealed Installation | | |
|---|---|---|
| Inner Diameter (mm) | Conduit Pipe Outer Diameter (mm) | Conduit Pipe |
| 20 | 17 | 12 |
| 25 | 21 | 16 |
| 32 | 28 | 20 |
| 40 | 32 | 25 |
| 50 | 44 | 32 |

For 12 and 16 mm nominal diameter pipe, the conduit pipe will have uniform colors: blue conduit for cold water and red for hot water. See Table 2, for conduit pipe diameter:

The radius of bending for the pipe and its conduit, when rising from the floor to the wall, should be [at least] 8 times the outer diameter of the conduit pipe (R=8D) to allow free motion of the inner pipe, inside its conduit, including easy threading and extraction.

To calculate the [bending] radius, select conduit pipe diameter and multiply it by 8. For example: A 16mm pipe is threaded inside a 25mm conduit, therefore the bending radius should be 8x25=200. Rising from floor to wall with a pipe and conduit should always be performed in two bending (see Figure 8, below). 30 cm before the transfer point and after it, the pipe should be fixed with concrete or by mechanical means.

Floor to wall dual 8D radii



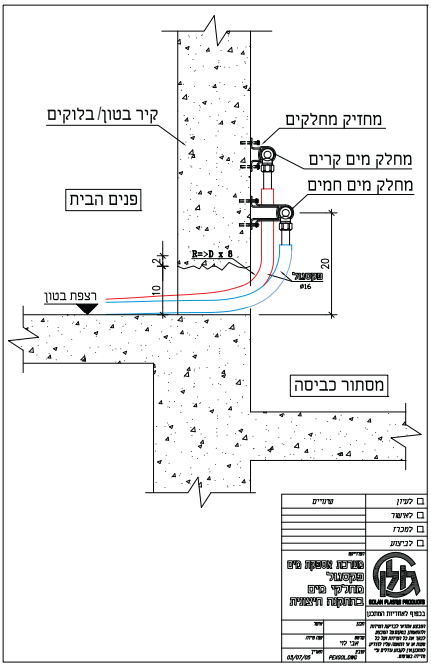

Conduit piping and water piping between terminal points and the distributor should be laid in one whole unit, with no branching or couplers.
The conduit pipe and supply pipe should be laid in the shortest path and in a continuous way from the distributor to the terminal point.

The pipe section between the distributor and the terminal should have no more than two transfers from one plane to a perpendicular plane: one descent from the distributor to the floor and one rise from the floor to the terminal point (see Figure 8, left side). On Gypsum walls, the pipe should be routed through existing/pre-made openings in the studs. The conduit pipe should be anchored to the stud every 60cm and close to the terminal point. It is possible to route water piping and conduits underneath fixed accessories (bathtub, shower, etc.) in concealed installation.

It is not obligatory to cover PexGol piping with concrete along its entire span. The pipe should be fixed with concrete or by mechanical anchors.
Thermal Insulation: Since the system is built of a pipe inside a pipe, the conduit serves as insulation in concealed installations.

## Distributor Installation

Hot and Cold Distributors installation - general view




PexGol Water Supply System - Externally Installed Distributors

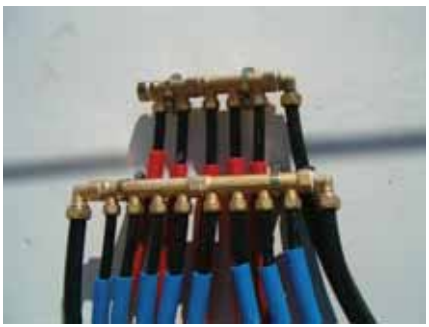
## Considerations in Distributor's Location

It is highly important to position the distributor in the correct location early in the design stage. The distributor should be placed in an area which allows easy access for installation and future maintenance. Placing the distributor in an area with poor access for handling and maintenance will result in bad installation and the system's serviceability will be low.

Block/Concrete wall, house interior, concrete floor, distributors clamp, cold water distributor, hot water distributor, laundry shed

## Distributors installed in a Cabinet

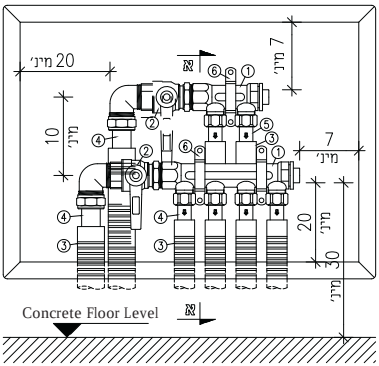
## External Installation

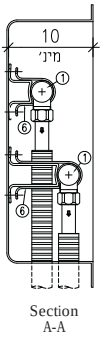


## Installing Distributors

Distributors should be installed in a place with easy access for service;
The distance between cold water distributor and hot water distributor should be at least 10cm; The distance from a concrete floor to the (lower) distributor should be at least 30cm.
The level of conduits in the distributor's cabinet must be lower from the conduit (upper) end at the terminal point (to avoid water/moisture buildup).
Each distributor should have a Main Disconnect Valve.

There should be an easy access to distributors installed in cabinets, to service connectors and to replace pipes. The distance between cabinet walls and distributor edge should be at least 7cm and 20cm, when pipes pass through those walls (see Figure 12, below).




### Legend:

- .1 Water Distributor
- .2 Disconnect Valve
- .3 Conduit Pipe
- .4 Water Supply Pipe to the Distributor
- .4 Cold Water Supply Pipe to Terminal Point
- .5 Hot Water Supply Pipe to Terminal Point
- .6 Distributor Clamp

### An Example of poor Distributor Location and Installation

Hot and Cold Water Supply Distributors, installed in a Cabinet

- Badly located/installed distributors
- The Distributor is positioned at a corner, access is poor
- Rise from floor to wall in a radius below 8D
- Walls were unnecessarily broken down

It is possible to install a distributor in a cabinet or externally, on top of a wall, without an internal cabinet. External installations may have several advantages: No damage to walls, easy and quick installation, easy access, convenient maintenance, transparency of the installed system and better quality control.

## Terminal Points

A terminal point consists of a 105º Socket and a Plastic Box, serving as housing for the socket. The plastic box will be fixed to the wall using concrete, to house a single or double tap. Care should be taken to assure that the box will protrude by 15mm from wall surface. The socket will be attached to the box by means of brass bolts and nuts, which can endure corrosion. The assembly will be installed so that it will facilitate for pipe extraction without having to break walls. The box assembly should be approved for installation by Golan Plastic Products Ltd.

On Gypsum walls, the box assembly will be installed with a frame (metal sheet/flange for Gypsum walls) and a plastic box for Gypsum walls. The frame will be affixed between two adjacent studs.
On concrete walls, the box assembly will be installed with a frame (Gypsum wall flange) and a Gypsum wall plastic box and anchored to the wall by a threaded Steel rod.

Connection Assembly

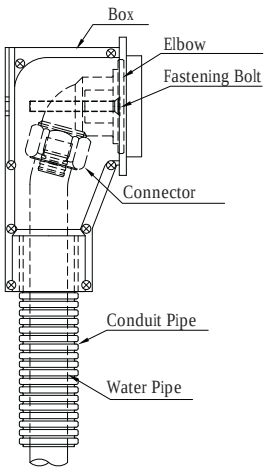
Correct (right) and incorrect (left) installation of box assembly on a concrete wall

## PexGol Piping Connection

Connection between piping and accessories should be achieved using fittings which comply to IS 5433, part 5 requirements: PexGol NTM-ISO type.

No accessories whatsoever should be installed in concealed installations on floors and walls, excluding the connection to a Multi-Way Tap (Interpots ???).

The hot water piping connection to the solar water heating system will be done with a 30cm (or above) metal pipe, installed between the PexGol piping and the tank's output, as detailed in IS 579, parts 4, 5 and 6.
No PexGol piping should be installed between the tank and collectors.



## Storage

According to Golan's instructions, PexGol piping with conduit should not be stored in places under direct sunlight or where damage and contamination to piping and accessories may result.

### Tools

The following tools are required for the installation of PexGol Systems:

- Cutting Shears for small diameter plastic pipes
- Open-end 24mm wrench for distributors and sockets
- An Extraction Tool, to pull out pipes

Tools should comply with instructions given in Golan's Catalog.

### Checking and Testing the System

The PexGol system should undergo an installation check after the piping is laid, the distributors and terminal points are installed and before covering the system. The piping should be visually inspected and bending radii checked, to verify no sharp bending or piping kinking occurred. System accessories should be checked, to verify their compliance with requirements. The whole system should be put to a pressure test: Test pressure should not be below 12 Bars for 60 min. During the pressure test, no signs of leaks should appear on the piping or the accessories and the pressure should not drop by more than 0.6 Bars. After the pressure testing, the system should be left under a constant pressure of 2 Bars or connected to the main water supply. Testing should be carried out by Golan's field representative only, excluding the pressure testing (to be performed by the contractor). After all tests are finished, the contractor will receive a detailed test report, summarizing all findings. A system failing tests will be fixed and put to additional testing.

The 10 year warranty for the PexGol system will be granted only after the testing and the issuance of a site visit report.

## Installation Instructions

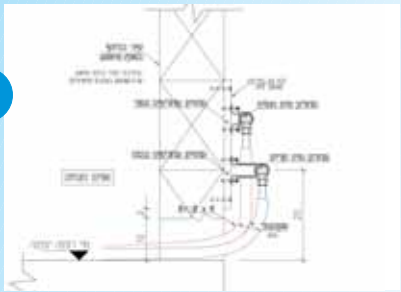
1

**Central Distributor Cabinet**

Position the Central Distribution Cabinet as close as possible to the water terminal points. Two distributor units are to be installed in the cabinet: one for cold water and one for hot water.

Leave sufficient room for easy access to the lower distributor, water supply lines and valves. The distributor should be placed at least 30cm above floor level.

2

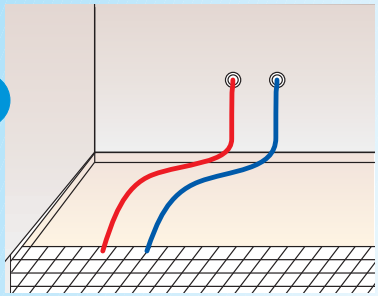


**Installing Distributors on External Walls**

To achieve a high level and qualitative installation of the distributors cabinet, it should sometimes be considered or required to install the distributors on the external part of the building.

External installations may have several advantages: No damage to walls, no need for stone cutting, easy and quick installation, easy access, convenient maintenance, ease of extraction – when a pipe is detached from the distributor it straightens.

3



### Proper Installation

The conduit pipe should be installed in the walls and under the finished flooring along the shortest possible route and in one continuous line from the distributor to the water outlet ports. Care must be taken to ensure that the bending radius of the conduit pipe is at least 8 times its diameter. The diameter of the conduit pipe must be larger by two diameters than the diameter of the corresponding PexGol pipe (for example: for a 16mm PexGol pipe the conduit pipe should be 25mm, for a 20mm pipe, the conduit should be 32mm and for a 25mm pipe, the conduit pipe should be 40mm in diameter).

4

### Plastic Box

The plastic box serves as housing for the 105ºelbow for connecting the PexGol pipe to the tap. Anchor the plastic box in the wall, embedded in cement, for a single or double tap as required. Care must be taken to ensure that the plastic box protrudes 15mm from the face of the wall. The nuts in the housing should be made of brass to prevent corrosion.

5

### Installation of the 105º Elbow Connector

The 105º elbow connector is installed in the following manner:

1. Place nut and split ring on the PexGol pipe;
2. Insert elbow into the pipe;
3. Tighten the nut with a #24 wrench.

6

### Attaching the 105ºElbow to the Plastic Box

After connecting the 105º elbow to the PexGol pipe, push the extra length of pipe back into the conduit pipe be pushing the plastic box in the direction of the distribution cabinet.

Connect the 105º elbow to the plastic box using two 3/16”X1 1⁄2” screws. Only brass screws are to be used to prevent corrosion. At this stage it is now possible to connect a single or double water tap.

7

## Connecting the pipe to the distributor

Connect the other end of the PexGol pipe to one of the distributor outlets. Identify the pipes as hot or cold water pipes and make sure they are connected to the hot and cold water distribution outlets respectively.
The method of connection is the same as for installing 105º elbows.

8

## Tools

The required tools are:
Cutting shears for plastic pipes, an open-end wrench and a screwdriver.
For your convenience, use a height and distance spirit level.

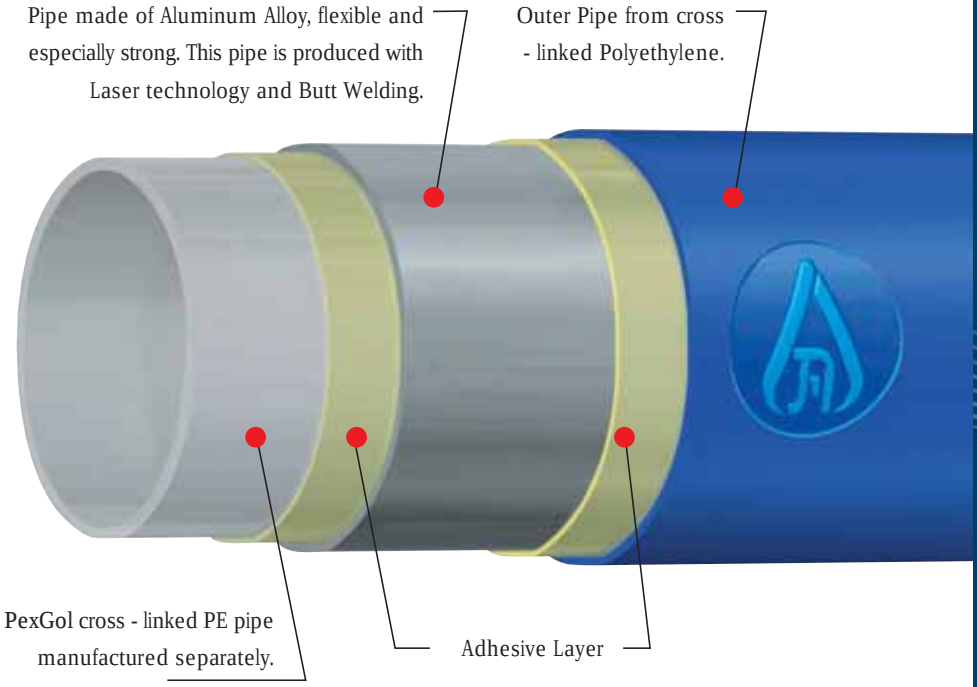
9

## Fitting the PexGol pipe with a Brass Connector

* Verify that the pipe is cut straight.
The pipe is to be connected following these consecutive steps:
1. Place nut and split ring on the PexGol pipe.
2. Insert the fitting into the pipe end.
3. Slide split ring towards the connector and tighten the nut with a suitable wrench.

## MultiGol System

This section describes installation instructions for Aluminum reinforced cross - linked Polyethylene pipes and crimping accessories having a crimping sleeve.




### Pipe: Aluminum reinforced C- type cross - linked PE pipe, made of 5 layers:

- Inner pipe from C - type cross - linked PE, withstanding a temperature of 95ºC
- Adhesive layer
- Aluminum Alloy pipe, flexible and especially strong
- Adhesive layer
- Outer cross - linked PE pipe

## MultiGol Pipe

This pipe is produced in the most advanced technology and is considered to be the leading pipe made by this process. In Israel, Golan Plastic Products is the sole producer of this unique pipe.

Multi - stage production: MultiGol pipes are manufactured in three stages.
At the first stage the inner pipe is produced and passes a meticulous testing process. After successfully passing all tests, the pipe passes to the second stage.
At the second stage the pipe is coated with a layer of adhesive. On top of this layer an Aluminum foil is produced, formed and rounded to a shape of a pipe and seamlessly welded by a Laser beam.
On the third stage, the Aluminum is coated with another layer of adhesive and a cross-linked PE layer, forming the outer wall of the pipe.

## Advantages

Due to the melting of the Aluminum foil lips during the butt welding process, the result is true seamless bonding. This has some advantages:

- Pipe's wall thickness is uniform and symmetri
- Stress is homogeneous and evenly spread
- The pipe is perfectly symmetric
- Rigidity and flexibility (the pipe may be subjected to bending and twisting without any danger of breaking or layer splitting
- The use of an Edge Trimmer (Rounder) saves the need for reaming and avoids damage to the inner diameter of the pipe and reduction of it
- Perfect match of the pipe to its fittings and accessories

PexGol
PEX-c inner pipe

The installation of MultiGol pipes and crimping accessories should be performed using tools supplied and certified by Gola Plastic Products only.
The use of tools and instruments from other manufacturers will result in failures in the installed system.

## Tools

- Electric Crimping Tool
- Rechargeable Crimping Tool
- Manual Crimping Tool
- 16-20-25-32 Crimping Jaw designated to instrument type
- Edge Trimmer
- 16-20-25 Pipe Bending Spring

### Edge Trimmer (Rounder)

The MultiGol pipe is produced in a perfect round and symmetric shape (Butt Welding Technology). When the edge of the pipe is being cut, it is slightly crushed and therefore needs to be rounded back, to avoid damage to O-rings during the insertion of the pipe into an accessory. To round the pipe, only MultiGol Edge Trimmers are used.

It is forbidden to use reamers which enlarge the pipe's inner diameter by carving into the pipe's wall and decreasing its thickness.

MultiGol
Edge Trimmer

### Pipe Bending

Bending of pipes should be performed in a way that will not damage the pipe or cause it to break. The bending radius of the pipe should not be lower than 5 times its nominal diameter. Every pipe bending should be done with an inner spring inserted.

## Crimping Jaw (Head)

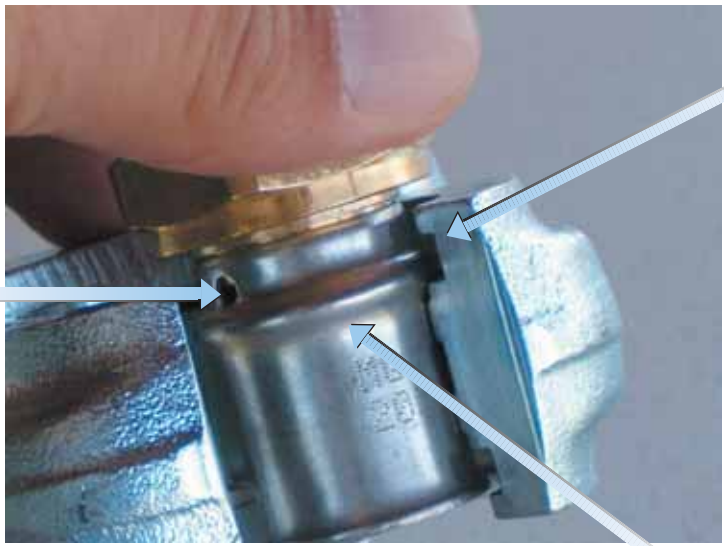
The Crimping Jaws supplied by Golan Plastic Products Ltd. are specially made for MultiGol accessories solely and therefore ensure precise crimping without causing any damage to the O-rings. This perfect crimping is achieved by integral gripping projections on accessories and sockets and by gripping recesses in the crimping jaw.

It is forbidden to use crimping jaws supplied by other importers and manufacturers! Using those heads may damage o-rings and accessories unusable.

| Standard Crimping Jaws made by Golan |
|---|
| 16 mm |
| 20 mm |
| 25 mm |
| 32 mm |

Crimping Jaw

## Crimping Jaw and Accessory fully fitted

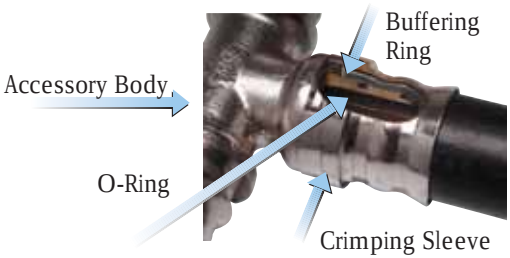



Connecting a Crimping Accessory to the pipe

## Accessory-to-Pipe Connection Process

- Pipe cutting should be done with cutting shears only and perpendicular to the pipe's axis.
- The Edge Trimmer should be inserted into the pipe in a circular motion to round it and create an inner flaring
- Insert the pipe into the accessory or socket until it reaches the buffering ring (a Teflon ring, separating between the Aluminum layer and the Brass accessory).
  The insertion is complete when the pipe is visible from the inspection window.
- Before proceeding to crimping, make sure that the crimping jaw fits the diameter of the sleeve and that it matches the crimping projections.

Attaching a pipe to an accessory with a crimping sleeve




## Installation

### Definitions

Exposed Installation: System components remain visible after their installation is complete.
Exposable Installation: After the installation is complete, system components are concealed and their exposure is possible in one of the following ways:

- Opening of doors, removal of covers
- Opening of dismantling ceilings
- Dismantling of light partitions

Concealed Installation: After the system is completely installed, its components are hidden inside parts of the building (wall, ceiling, floor) and their exposure requires dismantling or demolishing work.
Drawings: System installation should be performed according to detailed design prepared by a Sanitary Designer or drawings done by Golan Plastic Products Ltd. and approved by a Sanitary Designer only. Drawings should include pipe routing on the floor.
Installer Certification: The Installer should have a certificate, proof of qualification by Golan –for the MultiGol System. Certification from other manufacturers is not acceptable.
A contractor will receive a certificate only after finishing training and after a site inspection.
Privately Owned Piping: Hot or Cold water piping of system A should not be routed through private property owned by B, with the following exceptions:

- Installation is being performed according to [approved] design
- The installation is of the "Exposed" or "Exposable" type.
- Pipes are always accessible

## System Installation (Piping and Crimping Accessories)

Installation of the MultiGol system should be carried out in one of the following methods or a combination of them:

- Exposed Installation
- Exposable Installation
- Concealed Installation
- Radial Installation (separate pipe for each terminal point, originating from a common distributor)

### Pipe Identification

Pipes are supplied in Blue, Red, Black and White colors – for easy identification. Only Black pipes are UV- radiation protected.

### Pipe Routing

Concealed Installation

Pipes installed in the "Concealed" method should run continuously (with no connectors of the pipe-pipe union type) and in straight lines, 30cm away from the wall. Installing pipes in diagonal lines is not allowed. Contrary to the above, it is also not allowed to install T- branching accessories in bathroom floors.

The use of T- branching accessory in bathrooms is possible only in walls or outside the bathroom. No piping or accessories should be installed in concrete cast parts of the building.

Installation of piping under the flooring of toilets or bathrooms is allowed, providing that no connection whatsoever will be made along the entire pipe ("blind pipe").

No piping should be installed underneath fixed accessories (like: Bathtubs, Basins, and Bowls).

No pipes should be extended along kitchen cupboards, bathtubs or any other fixed cupboards. The pipe should only cross them.

Concealed Installation before covering and flooring

- All types of connectors may be used on exposed or exposable installations
- Piping should be anchored every 50cm
- No piping or accessories should be installed in concrete cast parts of the building

Thermal Insulation: Hot water piping not installed inside a conduit pipe should be isolated along its entire length and in any pipe diameter.

## Installing Water Supply Systems inside Gypsum Walls

Installation instructions for MultiGol pipes inside Gypsum walls are identical to those given above for concealed systems, with the addition of the following emphasized items:

- Piping should be anchored with clamps supplied as part of the piping. The distance between adjacent clamps should be according to Israeli Standard 1205.1 or recommendations of the piping manufacturer.
- The pipe must pass through prefabricated holes in the studs or through holes drilled with designated equipment. Hole diameter should be larger than pipe diameter by 50%.
- It should be verified that the pipe is protected by a protective sleeve in the pass-through section. It is important to anchor the sleeve at the point where the pipe passes through the hole, to avoid movement.
- The tap housing should be well anchored to ensure that the tap will not become loose when operated with reasonable force.

## Installing Outlet Ports (Sockets)

In the absence of a detailed design drawing, made by a sanitary designer, the location of outlet ports will be determined by IS 1205.3.

The socket should be attached to the flange, supplied by Golan, using screws

Battery Flange for Gypsum Wall
(also used as flange for a single tap)

Flange for a Single Tap

Oval Battery Flange

Single Tap Flange

Oval Battery Flange

Piping installed in the Concealed method should first be pressure tested and then covered by concrete.

T-Branching with diameter change

T-Branching with equal diameter

Single Tap Socket

90° Dual Socket

165° Dual Socket

Cross-Socket

MultiGol Crimping Sleeve Accessories

## Manufacturer's Directives

The Installer should pay attention to the following details and directives included in Golan's Technical Catalog:

- Dimensions of piping and accessories
- Storage instructions for pipes
- Tools required for installing piping and accessories
- Installation workmanship
- Combination of different materials, accessories and piping
- In an area exposed to sunlight, only black UV-protected pipe should be used. In these areas no blue, red or white piping is allowed! In any case, all types of pipes should not be stored under direct sunlight.

## Design Drawings

The System will be installed according to drawings, prepared by a Sanitary Designer or by Golan Plastic Products Ltd. and approved by a Sanitary Designer only.

## Pressure Testing

The whole system should be put to a pressure test once installation is complete:

Test pressure should not be below 15 Bars or above 20 Bars (for 60 min) Air should be evacuated from the water piping by filling it with water at supply pressure and then increasing the pressure as required and shutting off the valve between the pressure pump and the system under test. Pressure should not drop by more than 0.6 Bars.

During the pressure test, no signs of leaks or moisture should appear on the piping or the accessories. After the pressure testing, the system should be left under pressure for the entire period of construction.

# Installing **MultiGol** System with Crimping Sleeves

The following is an illustrated step-by-step guide to connecting pipes to an Integral (sleeved) Accessory:

1.

Cutting

2.

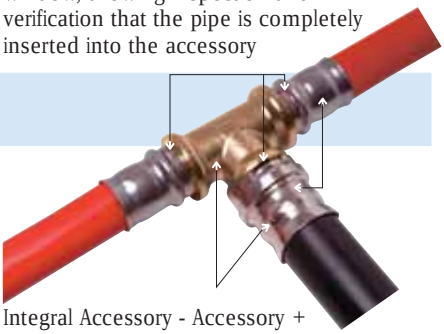
Rounding pipe's edge

3.

Inserting pipe into accessory:

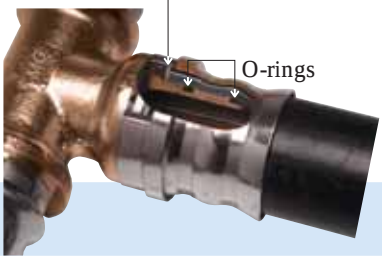
Integral Accessory:

On each accessory there exists a window, allowing inspection and verification that the pipe is completely inserted into the accessory



Integral Accessory - Accessory + Sleeve in one unit.

Teflon Buffering Ring to separate the Aluminum layer from the Brass accessory




Before crimping, verify that the crimping jaw is MultiGol System compatible and matches protrusions on the sleeve.

4.

Crimping

# Appendices:

## PexGol in Risers

Risers are vertical pipe lines, installed in shafts, supplying water pressure to all levels of multi-leveled buildings. As their name implies, risers are made for rising water to the building's entire height and to supply water to residential areas, fire-fighting systems and solar systems.

Risers for fire fighting systems should be made of steel pipes. This requirement is based on an Israeli Standard, forbidding installation of plastic piping of any kind for pressurized water fire fighting systems.

On the other hand, PexGol is an ideal pipe to be installed in risers for water supply to solar systems and in this application it boasts high durability and ease of install compared with the regular steel piping.

A riser for a solar system is part of a completely closed circular system, in which hot water is circulated through heat exchangers inside tanks in each flat in the building. The hot water warms the water in the tank and return back to the sun collectors on the roof. Water circulates in endless "loops", driven by an electric pump.

The Riser is comprised of three separate pipes - the first pipe feeds water to the tanks, the second collects water output from the tanks and the third pipe is connected to the end of the pipe line, collecting and returning water back to the roof.

The PexGol System (pipe and brass accessories) is superb in the aspect of system immunity to corrosion and scaling, energy saving (smooth pipes allow better flow) and ease of install of pipes and accessories.

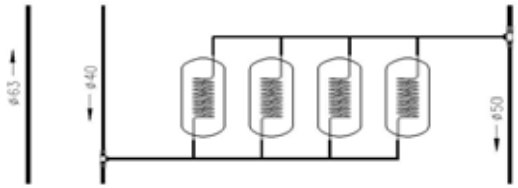
A Sanitary Installation Contractor using PexGol Risers will save the trouble of lifting heavy steel piping to all levels of the building, preparing threads with a slow and awkward threading machine and massive anchoring devices, due to the weight of the steel piping.

## Pipe to Accessory connection process

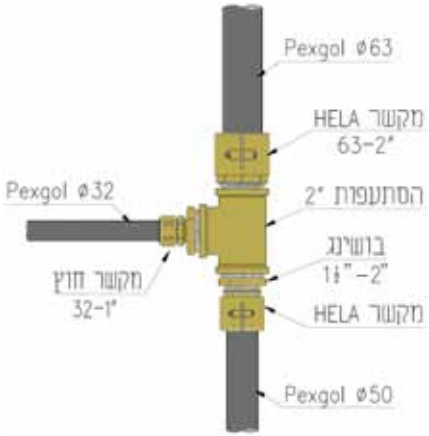
Installation time is extremely short, the manpower needed is small and deviations in the location of floor openings are not crucial, due to the piping's flexibility, as compared to steel piping, requiring high accuracy and complicated preparations.

A typical riser is comprised of pipes of different diameters. The smallest is 20mm and the largest may reach the size of 63 or even 75mm. The variety of pipe size made by Golan allow for the design and construction of risers for any requirement and any building.

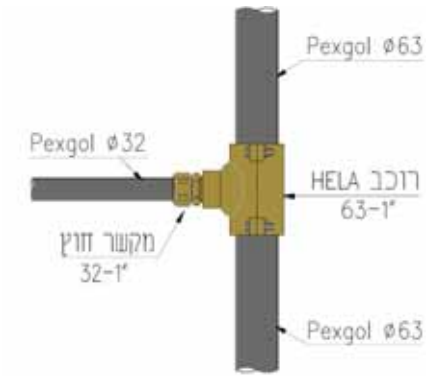
The fact that many contractors are interested in our PexGol piping system and the great number of systems installed proves its many advantages over steel piping in the construction of risers.




A typical level section

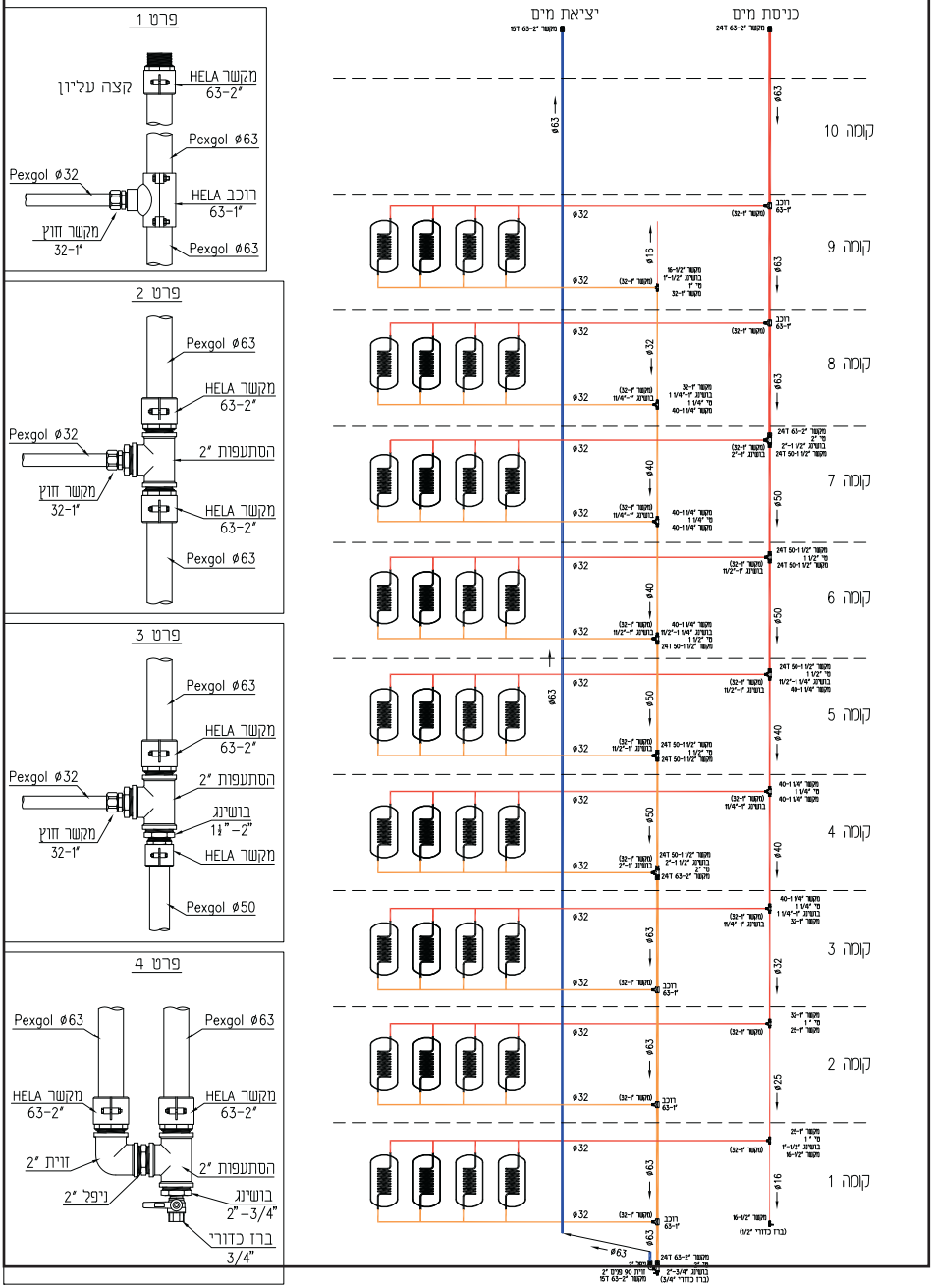



Branching with Diameter Change



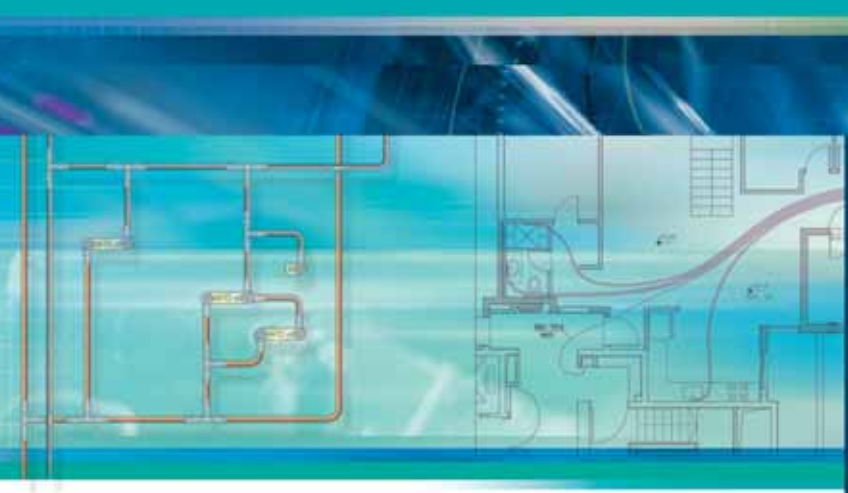

Typical Branching with a Saddle

# Typical Riser for an 8 level building;



## Tightening Torque for threaded accessories

| Diameter (mm) | Tightening Torque (Nxm) |
|---|---|
| 30 | 16 |
| 40 | 20 |
| 60 | 25 |
| 60 | 32 |



Golan Plastic Products

Golan Plastic Product Ltd.
Kibbutz Shaar Hagolan
15145 Israel
Tel. +972-4-6677432,
Fax. +972-4-6677451
E-mail: golan@golan-plastic.com

DVGW
GERMANY

▲Growth Hormone B2B 5/08 - 4105

www.pexgol.com