



Qu**ARTZ** by ACO

Linear shower drains

Technical Product Support Information



The shower drainage option designed to impress

QuARTz by ACO linear shower channel solutions inspire creative bathroom planning. They allow the use or elimination of physical barriers within the bathroom floor and can be incorporated into a wide range of designs.

Gratings can be replaced or LED lights added at a later date to generate a totally new look.

Quality and functionality

The high quality of the components is not limited to the design, materials and finish; ease of handling and installation are given the same attention to detail.

The difference is in the details

Products are designed to provide a long, reliable service life. The smooth surfaces guarantee safe drainage and hygiene in bathrooms. The seals, joints and materials guarantee low noise emissions.

Award-winning design

The stainless steel gratings visibly demonstrate the quality of the shower channels. QuARTz by ACO shower channel gives any number of opportunities to impress through quality and looks!



reddot
design award
winner 2009

product
design
award

2009



Standard solutions

A choice of seven grating designs, two material finishes in six standard lengths and two edge details provide the solution to most bathrooms.

Page 6



Custom solutions

The ability to customize the channel length, outlet position and outlet quantity to enable special design considerations to be met.

Page 12



Accessories

Water activated LED illumination through the grate, plumbing connectors and outlet sieve.

Page 14

Product Features

■ ACO quality

The shower channel components are all grade 304 stainless steel. Bodies are fully welded and leak tested prior to dispatch.



■ Multiple grating designs

The range of grating designs complements personal design preferences and can enhance the appearance of the room. Grates are also easily replaced for a new look.

Page 10



■ Material finish

Electro-polished

Channels and gratings are electro-polished. This process creates a shiny defect-free surface which minimizes cleaning and maintenance for a high class finish. The textured appearance of the grate is still visible after electro-polishing and helps reduce the appearance of finger prints and soap residue.

Oil-rubbed bronze

In order to complement the latest trend in bathroom fixtures, the channel and grate are also available in oil-rubbed bronze. This finish is applied over the same stainless steel base to ensure a long lasting quality product.



Determining type of drainage

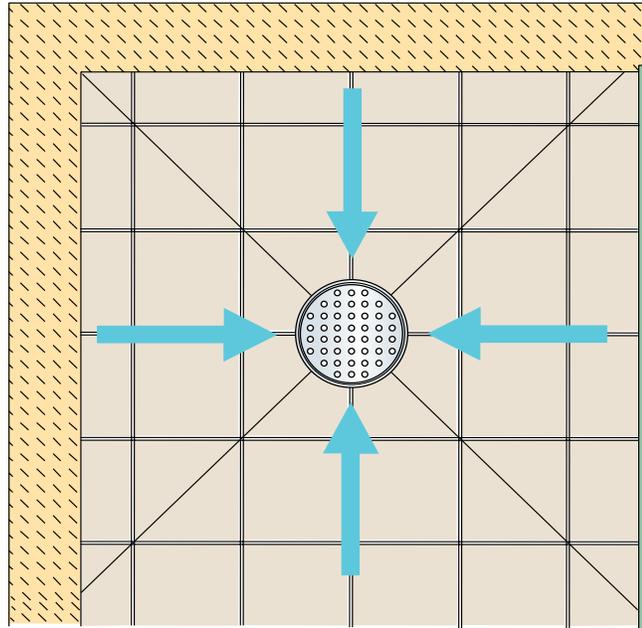
One of the most important decisions to consider with a tiled shower area is how to design the drainage.

Not only aesthetically, but also technically - the solution must fit the bathroom floor layout and grades to ensure it functions properly.

Traditional shower drain

Offers a point outlet, typically located at the center of the shower area. Requires careful 4-way grading of the floor to ensure water flows to the outlet without ponding.

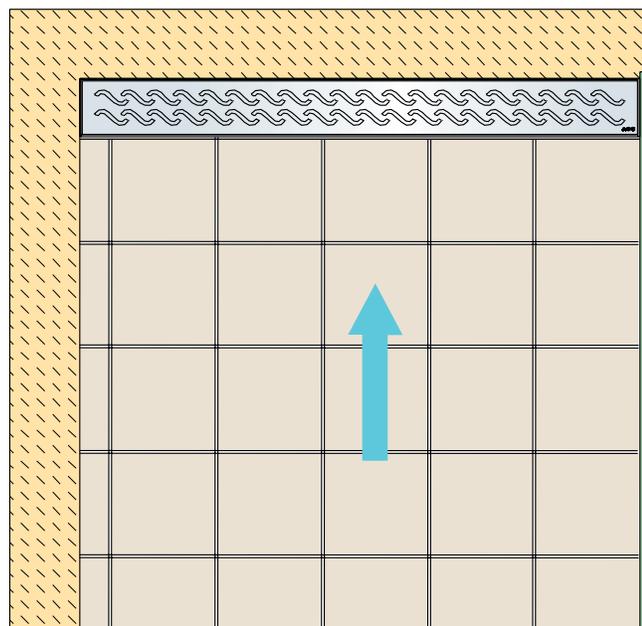
- Usually a cheaper initial product cost
- Usually not appropriate for level threshold applications
- Requires traditional tiled threshold step to contain water
- Tiling can be difficult and complex -particularly if using large dimension tiles
- Increased flooring cost due to extra time required to produce a 3D floor pan. Increased tile wastage due to significant increase in cuts required.



Linear shower channel

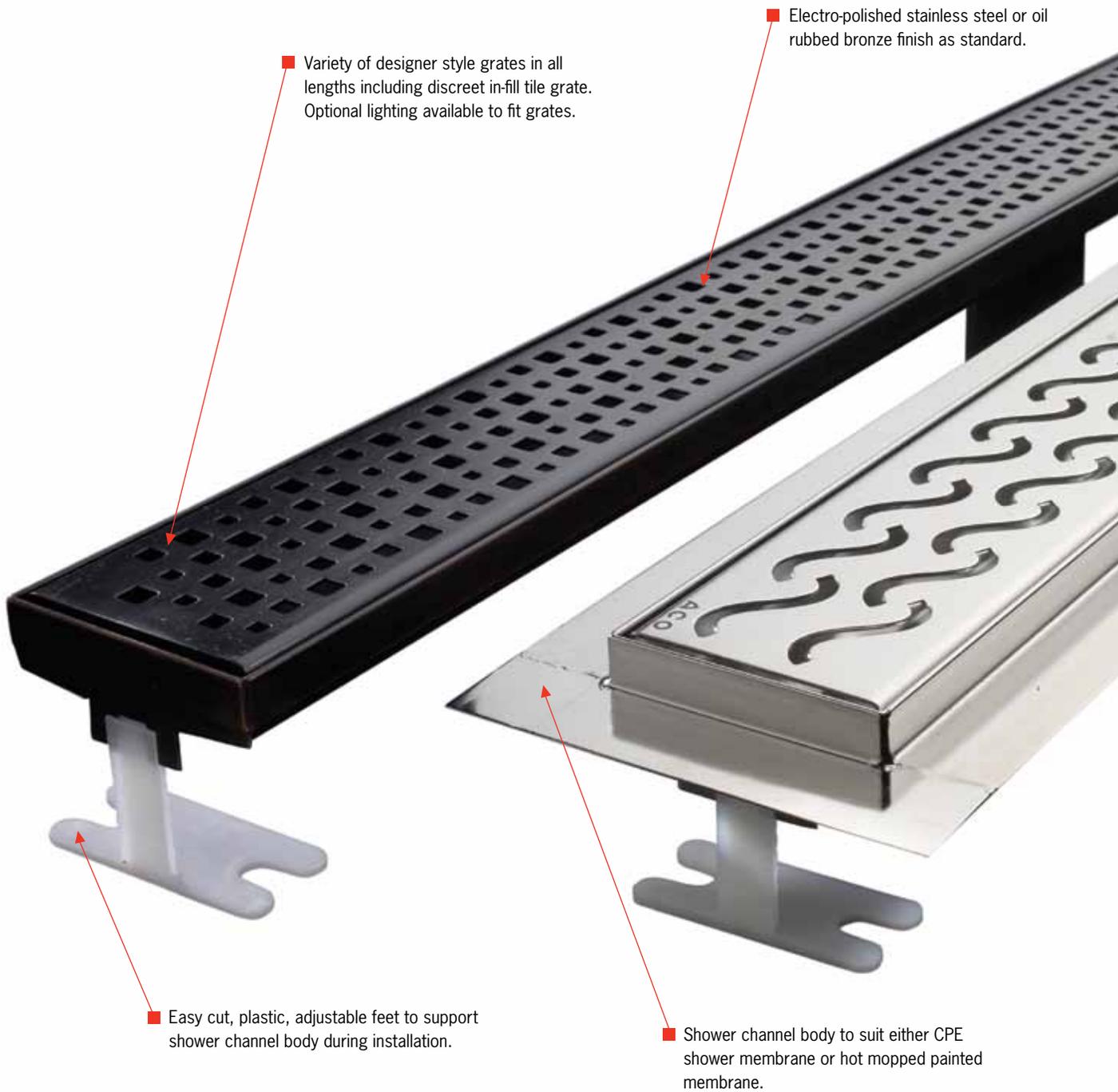
Offers a linear grate and body that can be located anywhere within the shower area. Requires simple 2D grading of the floor towards the channel.

- Usually a higher initial product cost
- Can be used with any type of tiled shower configuration
- Can be used to create wet/dry areas
- Level threshold can be created for easy wheelchair/disabled (ADA) access
- Tiling is simplified with minimal cuts required
- Easy to use with any tile size and material
- Reduced tiling cost due to decreased time required. Decreased tile wastage due to significantly fewer cuts required.





Features & Benefits:





■ Variety of lengths from 700 mm (27.56") to 1400 mm (55.12") as standard.

■ Shallow 'V' channel profile to aid flow of water to outlet.

■ Centrally located 2" stainless steel spigot outlet with optional strainer.

■ Pipe connectors available for either CPE membranes or straight outlet to plumbing pipe.

■ All bodies and grates are 304 stainless steel.

**Shower channel solution for CPE membranes
- plain edge**



Features

- 2" diameter central vertical outlet
- Flow rate: at entrance of shower - 6.65 GPM (0.4 l/s); against the wall - 9.51 GPM (0.6 l/s). See page 16
- Channel width: 3.3" (84 mm)
- Electro-polished and oil-rubbed bronze finishes
- Designed for use with CPE membrane fitting
- Plastic support feet aid installation
- Optional accessories include plumbing connectors, water activated LED lights and debris strainer (see page 14).



Product Table - channel only (select grate from page 10-11)

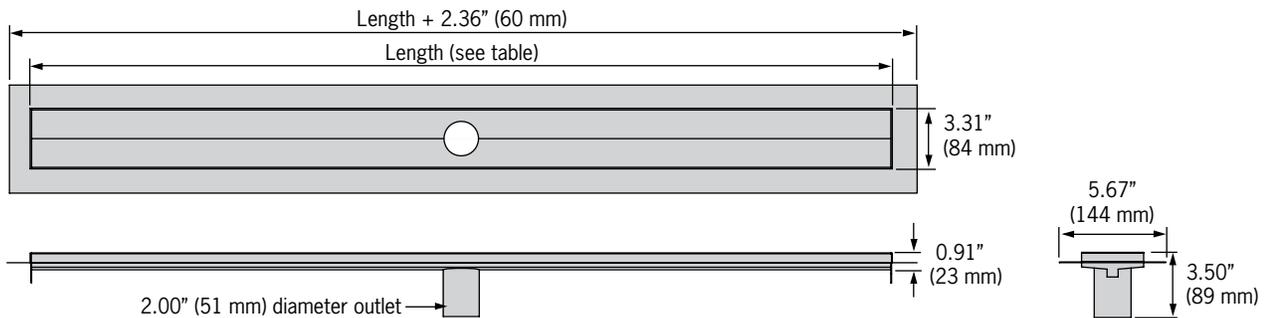
Length (mm) inches	700 27.55	800 31.50	900 35.43	1000 39.37	1200 47.24	1400 55.12
Part No. Electro-polished	93861	93864	93865	93869	93872	93816
Part No. Oil-rubbed bronze	93180	93187	93184	93189	93182	93177
Weight lbs	2.5	2.6	3.0	3.2	3.7	4.2

Shower channel solution for liquid membranes - flange edge



Features

- 2" diameter central vertical outlet
- Flow rate: at entrance of shower - 6.65 GPM (0.4 l/s); against the wall - 9.51 GPM (0.6 l/s). See page 16
- Channel width: 3.3" (84 mm)
- Electro-polished and oil-rubbed bronze finishes
- Designed for use with 'hot-mop', painted or liquid membranes
- Compatible with tiles up to 10 mm thick (14 mm lip)
- Stainless steel clad flexible coupling connects outlet to pipe system
- Plastic support feet aid installation
- Optional accessories include plumbing connectors, water activated LED lights and debris strainer (see page 14).



Product Table - channel only (select grate from page 10-11)

Length (mm) inches	700 27.55	800 31.50	900 35.43	1000 39.37	1200 47.24	1400 55.12
Part No. Electro-polished	93866	93873	93862	93870	93875	93817
Part No. Oil-rubbed bronze	93188	93181	93183	93186	93185	93178
Weight lbs	3.4	3.6	4.1	4.5	5.2	5.9

Stainless steel grating designs

Product Table

Design	Length in. (mm)	Part no.
 Wave™	27.55 (700)	37342
	31.50 (800)	37343
	35.43 (900)	37344
	39.37 (1000)	37345
	47.24 (1200)	37346
	55.12 (1400)	37413
 Quadrato™	27.55 (700)	37359
	31.50 (800)	37360
	35.43 (900)	37361
	39.37 (1000)	37362
	47.24 (1200)	37363
	55.12 (1400)	37418
 Flag™	27.55 (700)	37369
	31.50 (800)	37370
	35.43 (900)	37371
	39.37 (1000)	37372
	47.24 (1200)	37373
 Hawaii™	55.12 (1400)	37417
	27.55 (700)	37398
	31.50 (800)	37399
	35.43 (900)	37400
	39.37 (1000)	37401
 Mix™	47.24 (1200)	37402
	55.12 (1400)	37414
	27.55 (700)	37403
	31.50 (800)	37404
	35.43 (900)	37405
 Pixel™	39.37 (1000)	37406
	47.24 (1200)	37407
	55.12 (1400)	37415
	27.55 (700)	37408
	31.50 (800)	37409
 Tile™	35.43 (900)	37410
	39.37 (1000)	37411
	47.24 (1200)	37412
	55.12 (1400)	37416
	27.55 (700)	37335
 Tile™	31.50 (800)	37338
	35.43 (900)	37336
	39.37 (1000)	37334
	47.24 (1200)	37332
	55.12 (1400)	37419



Oil-rubbed bronze grating designs

Product Table

Design	Length in. (mm)	Part no.
 Wave™	27.55 (700)	37312
	31.50 (800)	37321
	35.43 (900)	37308
	39.37 (1000)	37313
	47.24 (1200)	37302
	55.12 (1400)	37292
 Quadrato™	27.55 (700)	37317
	31.50 (800)	37309
	35.43 (900)	37303
	39.37 (1000)	37320
	47.24 (1200)	37307
	55.12 (1400)	37297
 Flag™	27.55 (700)	37324
	31.50 (800)	37306
	35.43 (900)	37315
	39.37 (1000)	37322
	47.24 (1200)	37311
	55.12 (1400)	37296
 Hawaii™	27.55 (700)	37330
	31.50 (800)	37314
	35.43 (900)	37305
	39.37 (1000)	37325
	47.24 (1200)	37318
	55.12 (1400)	37293
 Mix™	27.55 (700)	37301
	31.50 (800)	37326
	35.43 (900)	37340
	39.37 (1000)	37319
	47.24 (1200)	37329
	55.12 (1400)	37294
 Pixel™	27.55 (700)	37304
	31.50 (800)	37333
	35.43 (900)	37328
	39.37 (1000)	37337
	47.24 (1200)	37316
	55.12 (1400)	37295
 Tile™	27.55 (700)	37327
	31.50 (800)	37300
	35.43 (900)	37331
	39.37 (1000)	37323
	47.24 (1200)	37310
	55.12 (1400)	37298



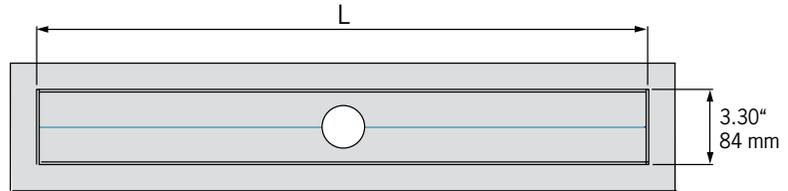
Custom Shower Channels

For projects requiring a number of units and standard channels are not appropriate, a number of features can be customized to ensure the unit meets required performance criteria.

Note: All diagrams show flanged shower channel body. Custom features are also available on plain shower channel bodies.

1. Length of shower channel

To meet specific room requirements the channel can be manufactured to specific length requirements - minimum 12" and maximum 192". Standard length grates are used, this may result in multiple grates per channel.



Length L = inches Width is fixed at 3.30" (84 mm)

Note: For flange body overall width is 5.67" (144 mm); Overall length is L + 2.36" (60 mm)

2. Position of 2" outlet

Plumbing layout restrictions may require a non-central outlet - the position of the outlet can be manufactured to suit site requirements.

Center position		Standard version
End position		L1 = inches L2 = inches
Custom position		L1 = inches L2 = inches

3. Number of 2" outlets

To meet hydraulic requirements of multiple shower heads the number of outlets can be increased. Outlet size is fixed at 2" diameter due to the width of the unit and availability of compatible plumbing connections.

Two outlets		L1 = inches L2 = inches L3 = inches
Three outlets		L1 = inches L2 = inches L3 = inches L4 = inches



Accessories

A number of accessories are available to ensure an aesthetic and trouble-free installation.

Plumbing fittings

In order to connect the 2" plain end spigot to the plumbing system a connection fitting will be required. QuARTz by ACO offer a choice of two:

- CPE membrane fitting - typically used with the plain body channel. Allows connection and clamping of a CPE flexible membrane
- Stainless steel clad flexible coupling - typically used with the flanged body channel. Used where a 'hot-mop' painted membrane is applied. Stainless steel cladding ensure connector is suitable where plastic fittings are considered a fire hazard.



CPE membrane connector



Stainless steel coupling connector

Debris strainer

A stainless steel sieve/strainer that sits inside the 2" diameter outlet to collect hair and debris. Note that use of strainer will reduce the flow performance of the shower channel.



Debris strainer

Product Table

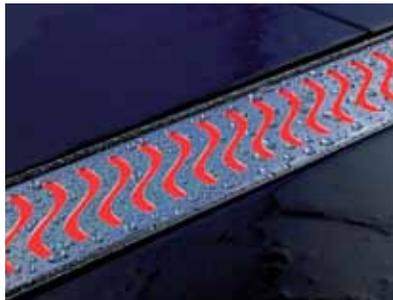
Description	Part No.	Weight
CPE membrane coupling	93871	1.1
Stainless steel clad coupling	93874	0.4
Debris strainer - electro polished	37381	0.8
Debris strainer - oil-rubbed bronze	37382	0.8

Water activated LED lights

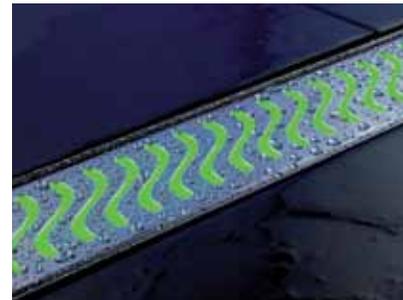
Illumination is possible for both standard and custom shower channels. The illumination is based on simple circuit completion: as sufficient water runs over the LED light packs the circuit connects the contacts of the LED light modules and the lights turn on. When the water stops running the illumination switches off.

Allowing a daily showering duration of 15 minutes, batteries would need to be recharged after approx. three months.

- Suitable for all grate designs except tile
- Automatically illuminate when in contact with water
- Light kit consisting of:
 - 2 x rechargeable LED packs
 - 1 x 110V UL rated low voltage charger
- Choice of colors; red, green, blue, rainbow (alternating colors)



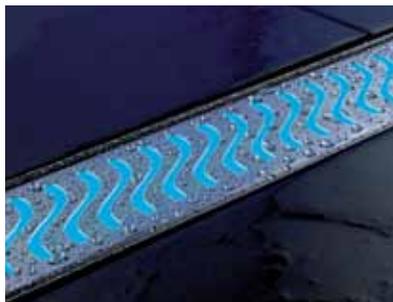
Red



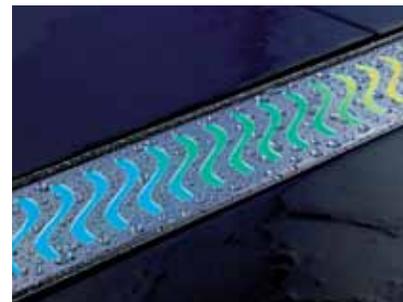
Green



LED light packs, charging unit and power cord



Blue



Rainbow (alternating colors)

Product Table

Description	Part No.	Weight
Red LED light kit	37377	1.5
Green LED light kit	37375	1.5
Blue LED light kit	37379	1.5
Rainbow LED light kit	37374	1.5

Note: Weight includes 2 lights, charger and adapter

Technical & planning considerations

Accumulation and slopes

ASME A112.6.3-2001 requires a 2" outlet for shower applications. QuARTz by ACO channels have this as standard. The flow value for a 2" outlet varies depending upon the head of water above the grating.

In the case of shower channels, a head of water is not typical in practice, due to shallower floor grades. Floor drains can have a head of water due to 'basin' profile of floor grades.

Flow values without any accumulation (head of water) should be used when shower channels are placed around the perimeter of the shower and no shower threshold step is used.

If the shower channel is installed against a wall, there may be a small amount of accumulation (head of water) depending on the layout of the shower area. Grade of shower floor will determine depth of build-up.



Installation against the wall.

Outlet flow rate up to 9.51 GPM based on floor grades such that 0.2" (5 mm) head of water possible.



Installation at the entrance

Outlet flow rate up to 6.65 GPM based on no water accumulation (head of water).

GPM Outlet flow rates

Grate	Accumulation (head of water)		
	0" (0mm)	0.2" (5mm)	0.6" (15mm)
No Grate	6.65	9.51	11.60
Tile	6.49	9.28	11.32
Quadrato	6.34	9.07	11.06
Flag	6.34	9.07	11.06
Wave	6.00	8.58	10.47

Note: Based on 900mm shower drain with standard 2" outlet

Outflow performance

The choice of shower channel generally depends on the flow values of the shower fitting. 70 % of shower heads have a maximum capacity of less than 3 GPM.

The QuARTz by ACO shower drain standard channel has an outflow of 6.65 GPM. This value assumes no head of water above drain.

Based upon these flow rates the QuARTz by ACO shower drain standard channel can be used in conjunction with the majority of shower head fittings.

A number of custom solutions are available to cope with shower heads with higher flow rates (see page 12).

Drainage planning information

Linear drainage options		
Installation against the wall	Walk-through: Installation against the wall	Walk-in: Installation against the wall
Simplest slope solution in one direction – slope away from the bathroom – no risk of bypass – use of CPE flexible membrane is recommended.	Slope in one direction – just shower area or whole bathroom floor can be sloped towards channel – use of CPE flexible membrane is recommended.	Simplest slope solution in one direction – slope away from the bathroom – no risk of overshooting water – use CPE flexible membrane is recommended.
Installation at shower entrance	Walk-through: Installation with two channels	Walk-in: Installation at the entrance
Slope in one direction, towards the bathroom – possible risk of bypass – slope of bathroom floor towards shower area is recommended to prevent bypass. Channel length should exactly fit the shower opening.	Two directional slope towards the bathroom. Channel length should exactly fit the shower opening.	Two directional slope towards the channel. Channel length should exactly fit the shower opening.

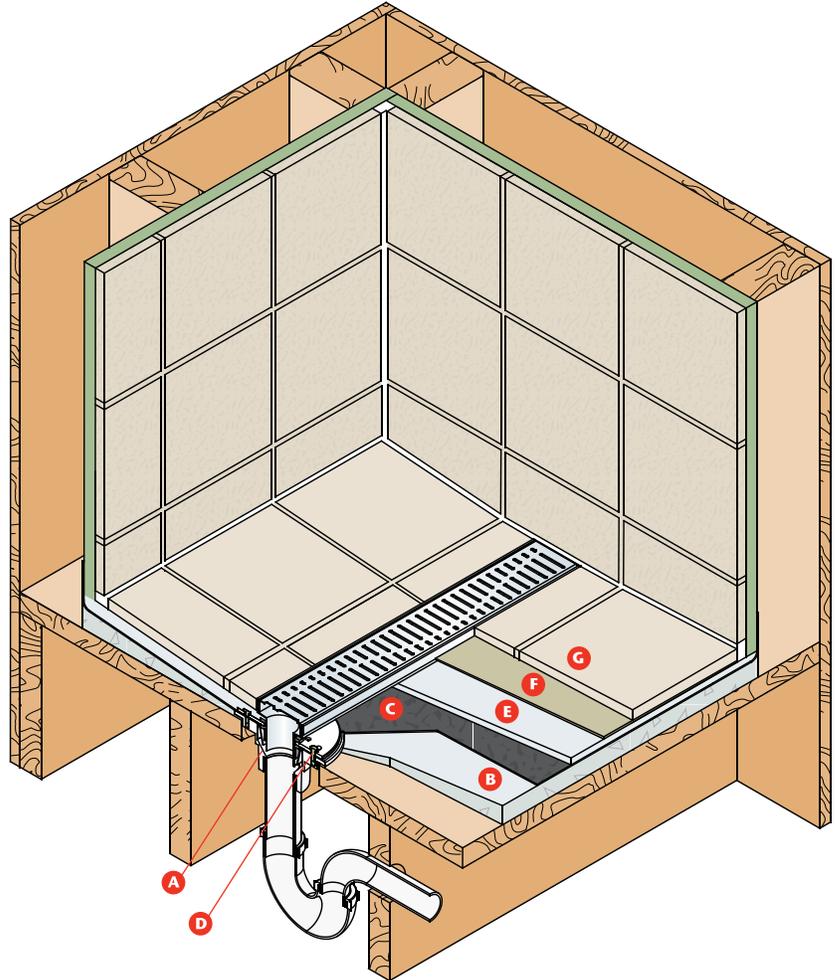
Installation overview

Tiled showers rely on waterproofing membrane beneath the tiles and grout. QuARTZ by ACO offers a number of options to ensure compatibility with different floor structures.

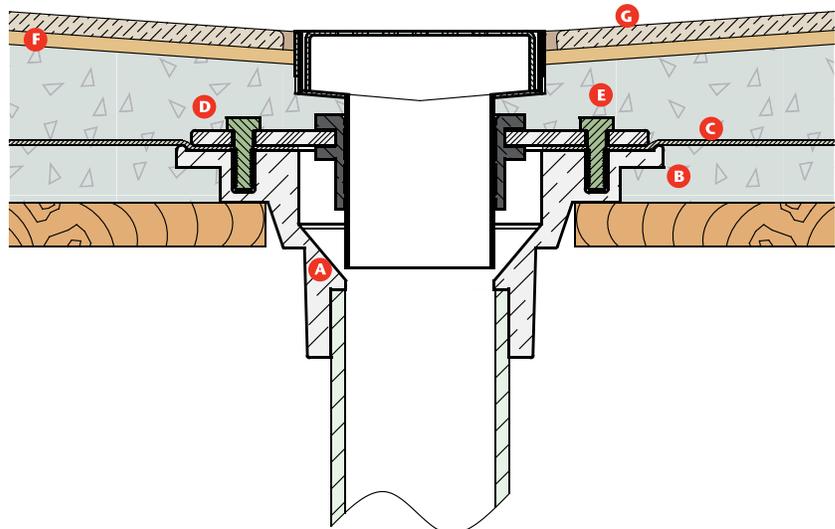
The installation details shown set out to provide the designer with integrated solutions to wet room floor drainage identifying preparation, installation and construction processes required to install waterproof channels and floor gullies in level threshold wet room environments.

Although these details do not cover every possible situation, they do provide a practical reference to most design applications.

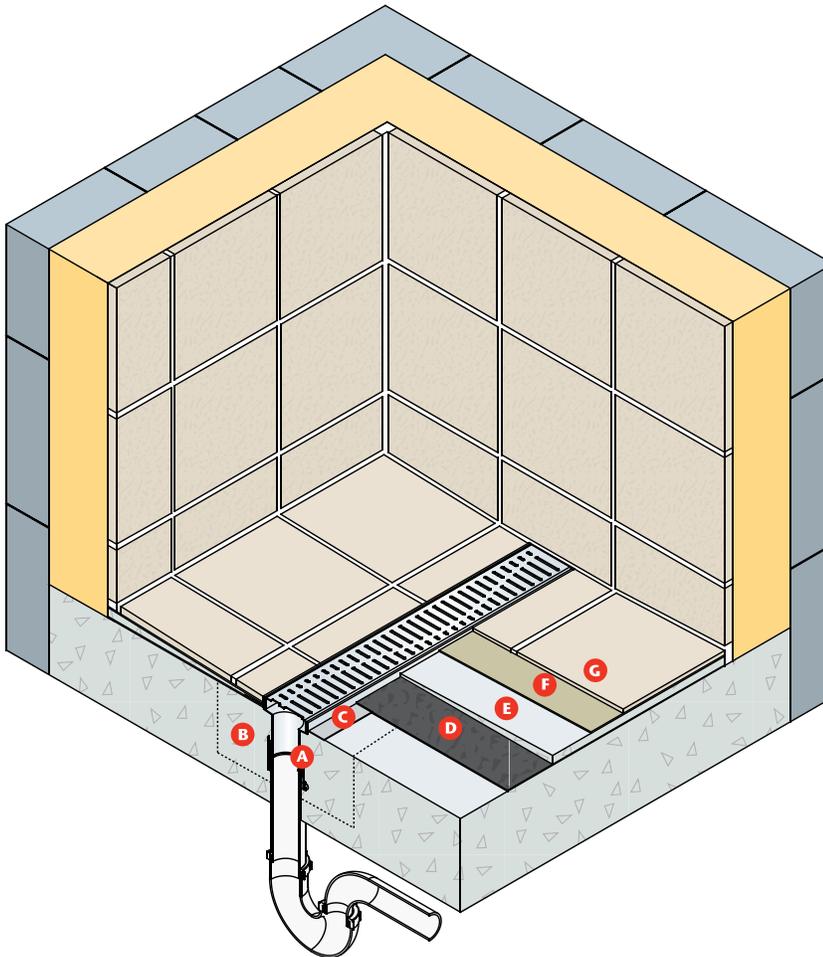
Plain body - joisted wooden floor



1. Where alterations to floor joists are necessary consult Structural Engineer for advice and reinforce floor joists as advised.
2. Frame out shower surround as required.
3. Connect base of flange outlet adaptor **A** to pipe work, leaving drain bolts in place. Block drain opening with rag to prevent floor mortar blocking pipe work.
4. Trowel mortar onto sub-floor. **B**
5. Install CPE membrane, **C** reinforce around outlet and cut carefully to reveal heads of drain bolts and outlet.
6. Install top section of flange outlet adaptor. **D**
7. Test membrane for leaks
8. Lubricate outlet spigot on shower channel (liquid soap) and push fit shower channel into correct position and height.
9. Cut plastic installation feet to height to rest on the membrane and keep shower channel at required height and level.
10. Trowel mortar to required height, **E** allowing for thickness of tile and thin set mortar and grade to create 1% slope towards the drain.
11. After floor mortar has cured, apply thin set, **F** install tile and grout. **G**
12. Install grate into shower channel.



Flange body - concrete floor

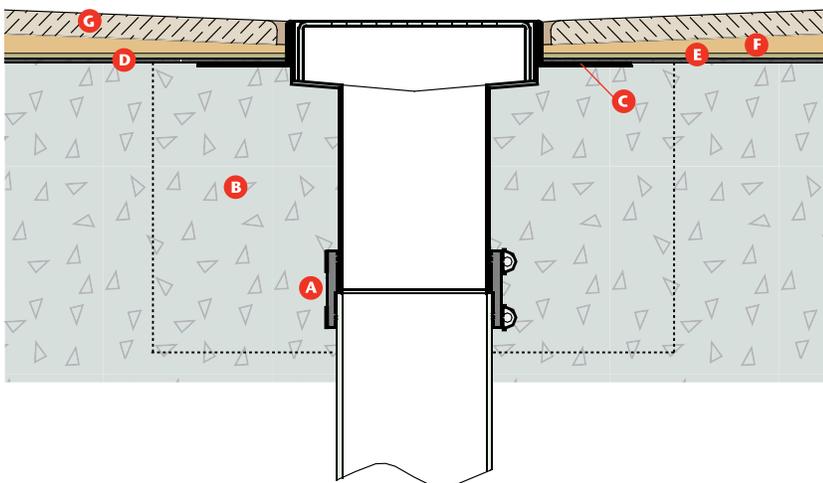


1.

Box out detail showing suggested dimensions
2.

After removing box form work connect shower channel to plumbing pipe work using stainless steel connector part number 93874.
3.

Shower channel fitted in place prior to final concrete slurry pour. Shower channel flange should be at same level as original concrete slab.



1. Frame out shower surround in concrete slab as required, see diagram top right.
2. Set top edge of shower channel slightly below finished tile level, cut plastic installation feet to height to hold shower channel at required height and level.
3. Connect outlet to pipe work using 2" stainless coupler. **A**
4. Pour concrete slurry **B** into framed out void in concrete slab to height of flange on channel body. **C** **D**
5. Install 'hot-mop'/liquid membrane, fully covering concrete and flange of shower channel in accordance with manufacturer's instructions.
6. Trowel mortar to required height and grade, approx. 1%. **E**
7. Apply thin set. **F**
8. Lay tile and grout. **G**
9. Install grate into shower channel.



Other ACO product lines

■ ACO DRAIN

ACO Drain is the world's leading modular trench drain system for commercial, industrial and landscape applications.

■ ACO SPORT

ACO Sport is a range of surface drainage and building accessories for track & field, used at Olympic sites since 1972.

■ AQUADUCT

Aquaduct custom designs and manufactures fiberglass trench drain systems to meet individual project requirements.

■ ACO ROAD

ACO Road is a range of surface drainage products engineered for the unique design and performance demands of highways, urban roads and bridges.

■ MARKANT BY ACO

Markant by ACO is a range of building products designed for the residential builder and DIY enthusiast.

■ ACO WILDLIFE

ACO Wildlife is a tunnel and fence system designed to guide amphibians and other small creatures safely across roads.

QuARTz by ACO is a division of ACO Polymer Products, Inc.

ACO Polymer Products, Inc.

East Sales Office

P.O. Box 245
Chardon, OH 44024
Tel: (440) 285-7000
Toll free: (800) 543-4764
Fax: (440) 285-7005

West Sales Office

P.O. Box 12067
Casa Grande, AZ 85130
Tel: (520) 421-9988
Toll Free: (888) 490-9552
Fax: (520) 421-9899

Electronic Contact:

info@QuARTzbyACO.com
www.QuARTzbyACO.com

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