MAGCAT®

since 1973 FLUID DYNAMICS

CERTIFIED

The Magcat launched in 2008 following years of research and development. The Magcat is a two stage **commercial and industrial water conditioning system** suitable for **treating potable, processed, recycled or waste water** and providing the most complete reaction available for calcium carbonate treatment

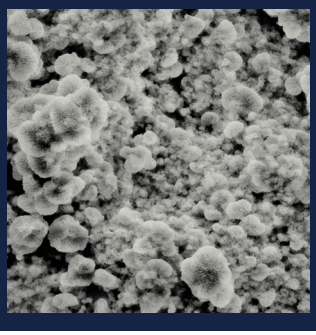
OUR DUAL TREATMENT SYSTEM

Combining magnetic and catalytic technology, we created our most innovative,versatile and powerful conditioning products to date.

Our dual treatment conditioner is the only self-powered, compact product on the market specifically designed for a wide range of flow rates and water chemistry.

UNTREATED

Forms large, hard, crystals



TREATED

Forms small, soft, easy to remove, crystals

Benefits

- ✓ Truly sustainable - 100% recyclable at end of life
- ✓ 10 year pro-rata warranty
- ✓ Water can stay effectively treated for up to 3 months
- ✓ Prolongs the life of water using applications and heating systems
- ✓ Reduces limescale build-up in pipes, valves, pumps and heating elements
- ✓ Reduces energy consumption generating cost savings
- ✓ Self powering - no power needed, no BMS required and zero energy use
- ✓ Easy to install - horizontally or vertically, with low weight and small footprint
- ✓ Cost effective, proven and sustainable
- ✓ No upper limit to water hardness that can be treated
- ✓ No metals leaching into the water
- ✓ No upstream or downstream space required
- ✓ World **c**lass dual treatment technology - capable of treating wide flow rate range

Materials of construction

- ✓ Stainless steel housing
- ✓ Non-sacrificial catalytic semi precious alloy (lead free) - WRAS approved
- ✓ Magnets - Stainless steel coated alloy magnets - WRAS approvedflow rate range

Life expectancy

- ✓ Dependant on use, a minimum of 10 years service 15-25 years + is not uncommon

Applications

- ✓ Apartment blocks
- ✓ Commercial offices
- ✓ Schools
- ✓ Universities & colleges
- ✓ Leisure centres
- ✓ Cruise ships
- ✓ Maritime transport
- ✓ Cinemas
- ✓ Retail parks / shopping centres
- ✓ Restaurants
- ✓ Farming / irrigation
- ✓ Marine applications
- ✓ Much more!

Regulatory

- ✓ WRAS Approval No: 240102713
- ✓ Reg4 Approval No: 2312017

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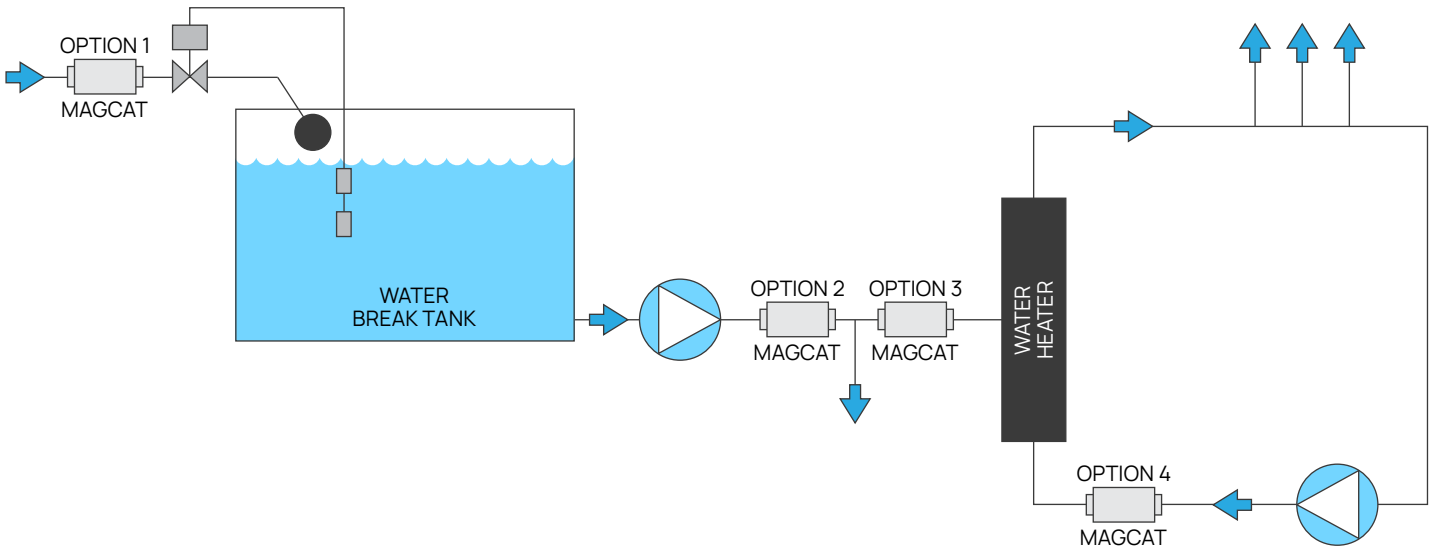
INSTALLATION GUIDE

Sizing

- ✓ Size matters - selecting the right conditioner is critical
- ✓ An incorrect sized conditioner - including using a larger diameter than needed - can compromise water delivery and affect treatment
- ✓ Conditioner size should be selected based on **flow**
- ✓ Applications where the flow rate is known to be low or there is relatively heavy scale build-up inside the pipe already, a conditioner 1 size smaller than the pipe diameter is recommended
- ✓ Conditioners can be installed vertically or horizontally

OPTION 1: INSTALL ON FEED TO TANK
IF DELAYED ACTION BALL VALVE OR
LEVEL SWITCH FILL INSTALLED



A water conditioning device induces nucleation of hardness scale and in doing so prevents hard deposits forming.
As such, a water conditioning device does not remove the hardness and may still be present in evaporative conditions.

Fitting options

Fluid Dynamics has a wide range of connection options available - please ask.

COMMON THREADS

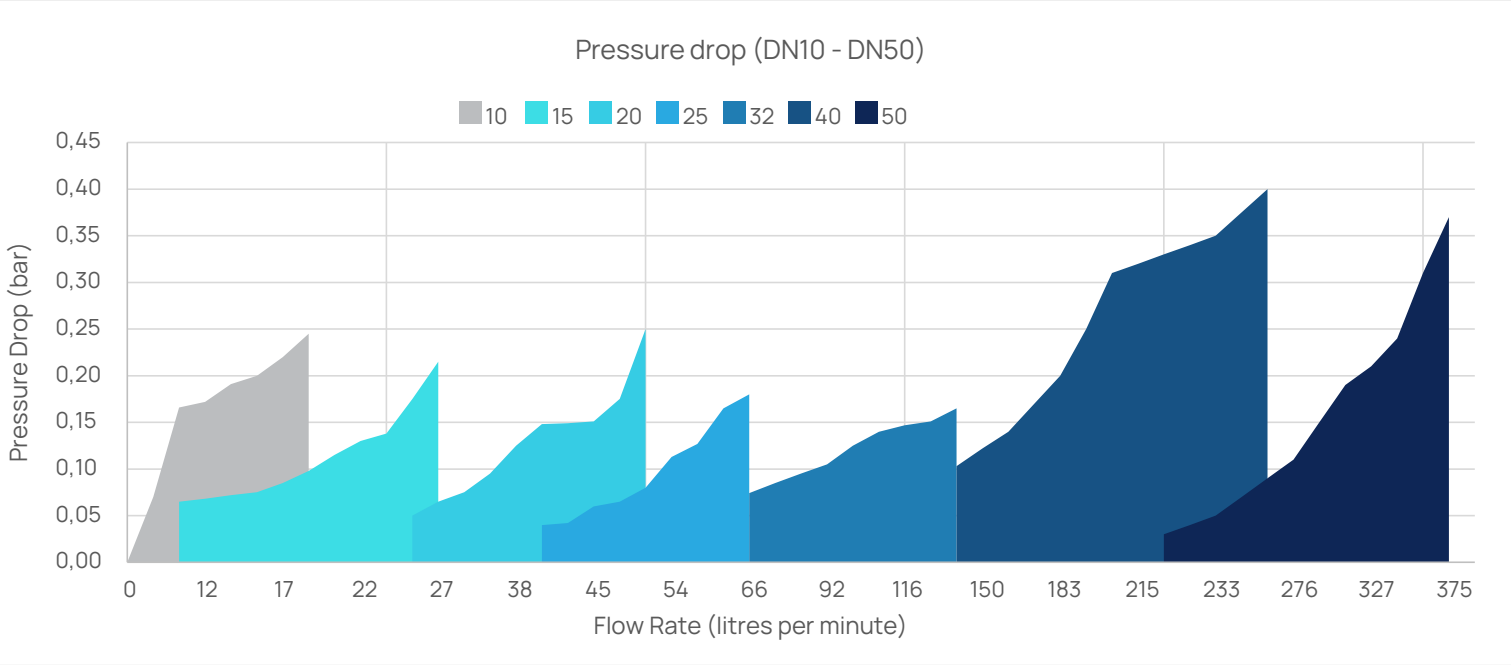
UK: BSPT CONNECTIONS (DN15 TO DN50)
½" to 2" BSPT (British Standard Pipe Tapered) threads
These conform to BSP (British Standard Tapered)

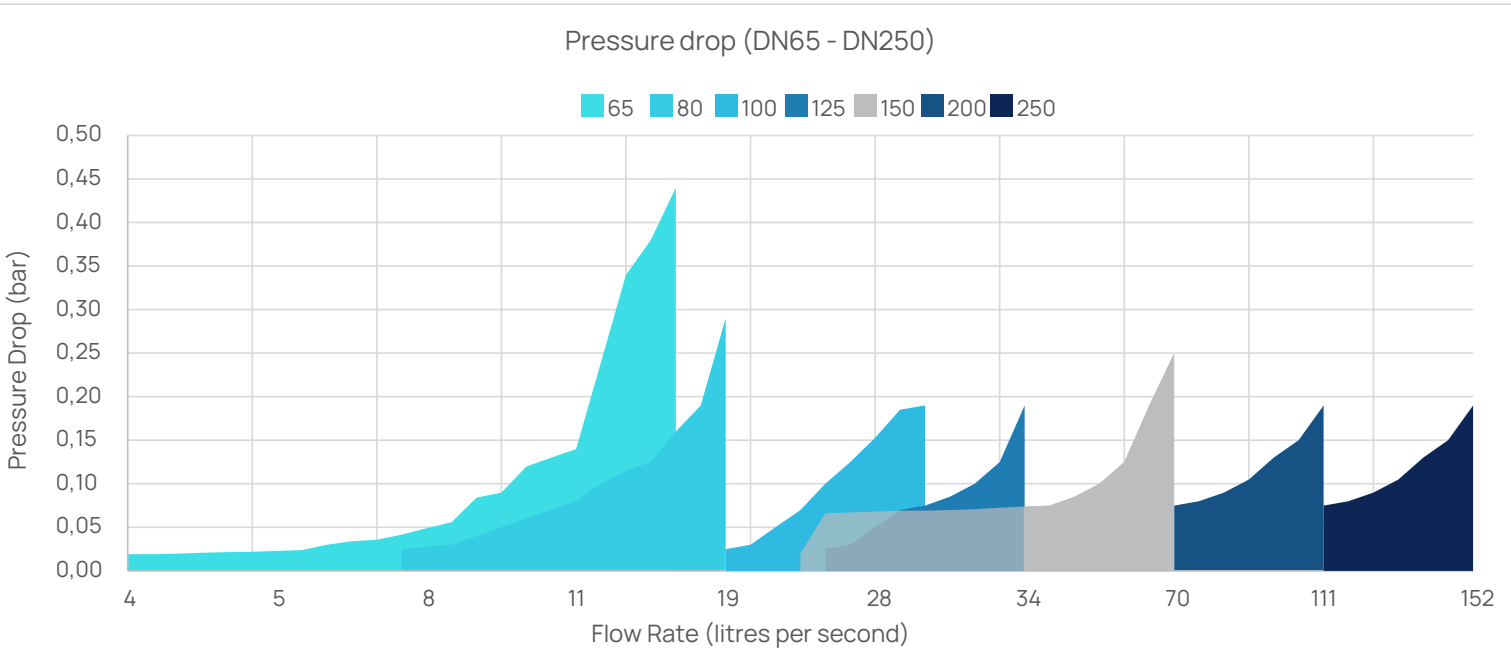
FLANGES - DN65 UPWARDS (2.5" +)
A wide range of flanges can be specified as the fitting option required

UK
Standard fitting in the UK is the BS4504 PN16 stainless steel flanges
Higher pressure ratings are available upon request
Maximum operating temperature = 120 degree celsius

PRESSURE LOSSES

- Both our catalytic and combination (dual) systems have internal components designed specifically to minimise resistance as water passes through
- Correctly installed conditioners will have a negligible impact on pressure drop - to a maximum of 2%





CLIENTS

BRIDGESTONE

Coca-Cola

PROVEN BY

Politechnika Wrocławska

Brunel University London

Trinity College Dublin

University of Reading

HARWELL

TEXAS A&M UNIVERSITY

DATA TABLE

Water temp (°C)	0 to 100
Max pressue (bar)	16
Materials	External: Stainless steel housing and connectors Internal: FD catalytic galvanic alloy

Product code	Description	Connection type	Suitable for pipe diameter	Optimal flow range (lpm)	Length (mm)	Weight (kg)
MAT15BS	MagCAT 15	½" BSPT	½" (DN15) ¾" (DN20)	3 - 25	450	2.5
MAT20BS	MagCAT 20	¾" BSPT	¾" (DN20) 1" (DN25)	24 - 54	550	4.9
MAT25BS	MagCAT 25	1" BSPT	1" (DN25) 1¼" (DN32)	45 - 90	550	5.5
MAT32BS	MagCAT 32	1¼" BSPT	1¼" (DN32) 1½" (DN40)	85 - 120	800	6.5
MAT40BS	MagCAT 40	1½" BSPT	1½" (DN40) 2" (DN50)	110 - 210	800	8
MAT50BS	MagCAT 50	2" BSPT	2" (DN50) 2½" (DN65)	170 - 330	800	10
MAT65PN	MagCAT 65	2½" PN16 Flange	2½" (DN65) 3" (DN80)	310 - 675	1000	18
MAT80PN	MagCAT 80	3" PN16 Flange	3" (DN80) 4" (DN100)	600 - 1175	1000	30
MAT100PN	MagCAT 100	4" PN16 Flange	4" (DN100) 5" (DN125)	950 - 1750	1000	46
MAT125PN	MagCAT 125	5" PN16 Flange	5" (DN125) 6" (DN150)	1500 - 2150	1000	65
MAT150PN	MagCAT 150	6" PN16 Flange	6" (DN150) 8" (DN200)	2000 - 4150	1000	80
MAT200PN	MagCAT 200	8" PN16 Flange	8" (DN200) 10" (DN250)	4000 - 6600	1000	132
MAT250PN	MagCAT 250	10" PN16 Flange	10" (DN250) 12" (DN300)	6500 - 9960	1000	187
MAT300PN	MagCAT 300	12" PN16 Flange	12" (DN300) 14" (DN350)	9500 - 11700	1000	297
MAT350PN	MagCAT 350	14" PN16 Flange	14" (DN350) 16" (DN400)	11500 - 13200	1000	375

SPECIFICATION CLAUSE: EXAMPLE

The mechanical contractor shall supply and install a WRAS approved dual treatment physical water conditioning device for the inhibition of hard limescale formation within domestic hot water supply system.

This design is based on the Magcat dual treatment physical water conditioner, utilising magnetic and galvanic catalytic technology, model reference MAT15BS as manufactured by Fluid Dynamics (contact hello@fdiltd.com).

On appointment, in order to confirm the most effective position in the H/CWS system for the physical water conditioner, the mechanical contractor shall coordinate with the manufacturer, and take into account the water services design and local water quality.

The device shall generally be in accordance with the following parameters:

1. Connection type: ½" BSP
2. Design flow rate: 0.25 l/s
3. Pressure drop: 0.07 mbar
4. Power supply: Not applicable

The dual treatment physical water conditioner shall consist of the following features:

1. WRAS approved components
2. Non-sacrificial catalytic alloy conditioning core
3. Permanent magnets, minimum peak Gauss 5000, for generating a sufficient field
4. A piping system design to pass 100% of the water through the magnetic field, perpendicular to the field lines
5. Effective treatment period up to 3 months
6. Manufactured in a stainless steel housing with stainless steel fittings
7. Minimum warranty 10 years
8. Minimum effective lifespan 15 years
9. No servicing requirements and no required consumables
10. 100% recyclable at end of effective life

It is preferred that the manufacturer is able to provide a mid-level LCA in line with the TM65 Embodied Carbon Calculation Methodology, in order to enable accurate environmental impact monitoring.

The device shall be installed in strict accordance with the Manufacturers literature.

The here above recommended specification clauses are intended to cover a wide range of installation applications. For a project specific specification, it is recommended to discuss with a Fluid Dynamics representative.

ENVIRONMENTAL DATA

Environmental data summary	Magcat physical water conditioning
Declared unit	1 unit of water conditioning equipment
Declared unit mass	Model specific
GWP-fossil A1-A3 ($kgCO_2e$)	Model specific
GWP-total A1-A3 ($kgCO_2e$)	Model specific
Secondary material, inputs %	0%
Secondary material, outputs %	100%
Total energy use, A1-A3 (kWh)	Model specific
Total water use, A1-A3 (m3)	Model specific
PRODUCT RAW MATERIAL	
Metal amount, mass %	99.8
Mineral amount, mass %	0.19
Fossil materials amount, mass %	0.01
Bio-based materials amount, mass %	0
BIOGENIC CARBON CONTENT	
Biogenic carbon content on product, kg C	0
Biogenic carbon content in packaging, kg C	Model specific
FUNCTIONAL UNIT AND SERVICE LIFE	
Declared unit	1 unit of water conditioning equipment
Declared unit mass	Model specific
Reference service life	25 years