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July 2019

Ports & Airports Surface Water Drainage Systems & Access Covers





Alumasc is a UK-based supplier of premium building products. The majority of the group's business is in the area of sustainable building products which enable customers to manage energy and water use in the built environment.

Alumasc Water Management Solutions provide 'Rain to Drain' solutions, that set the standard for urban water management. They include: Skyline Fascias, Soffit & Copings; Alumasc Rainwater Gutters & Downpipes; Harmer Building Drainage; Gatic Civil Drainage & Access Covers and Wade Building Drainage.

Under the AWMS banner, customers benefit from rainwater and drainage products that capture, retain and control the flow of rainwater in the most effective way inside and outside buildings.











ENVIRONMENTAL

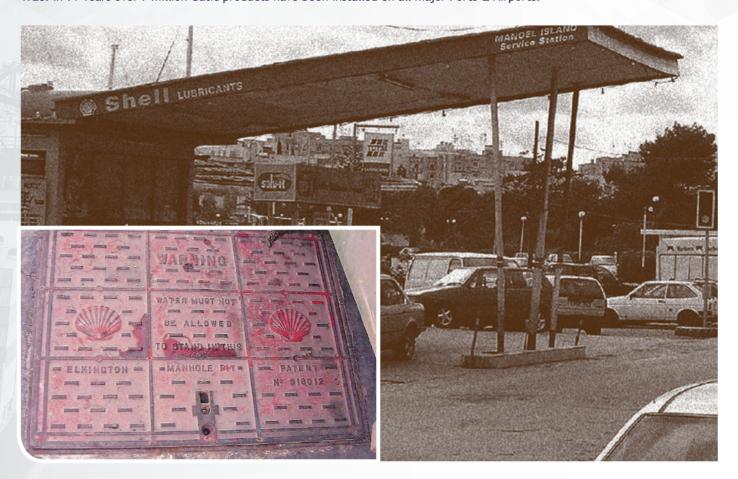


The Gatic Environmental Management System has been approved to ISO 14001:2004 Certificate No. EMS 593419



What is Gatic?...Gas Air Tight Inspection Covers

Gatic's involvement with gas air-tight inspection covers spans more than ninety years. In fact, one of the earliest covers produced by the company (then known as Dover Engineering) is still in service at a Shell garage in Malta, where it was first installed in 1928. In 91 Years over 7 million Gatic products have been installed on all major Ports & Airports.



With a history of installations dating back more than ninety years, Gatic is without doubt the fully proven International Standard for engineered access covers and drainage gratings.

Original 1928 cover still in use

When we were asked to design our first gas and air tight cover for Shell, back in the 20s, it was to a demanding specification. Our success in meeting this specification can be judged by the fact that one of the first covers supplied can still be seen in use at a Shell garage in Malta where it was originally installed.

Continuous development and refinement

Since that first success we have continued to improve and adapt our range of products to suit the ever increasing and diverse demands of travel, industry and commerce, developing ductile iron, machined access covers in a range of surface finishes and load ratings to cope with the harshest and most punishing of environments.

Future challenges

Despite this huge variety, technology never stands still for long and we are never allowed to rest on our laurels. These days more and more traffic is using our roads, carrying heavier loads at higher speeds. Huge numbers of containers pass through our ports daily and ever bigger and heavier aircraft are rolling down the taxiways and across the aprons of the airports we serve.

The challenges may be daunting but we are confident that we will continue to rise to the occasion and supply products to meet or exceed our customers demands.



Integrated access cover and surface water management systems for ports and airports



Access Covers

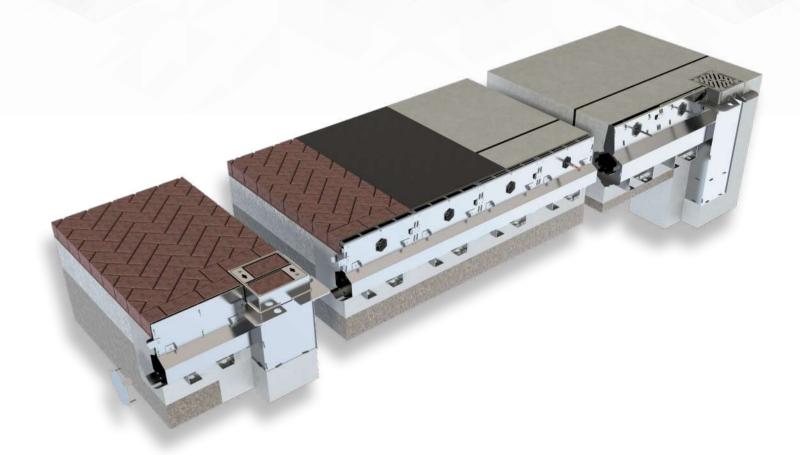
Modern-day covers look superficially very similar to this early version but in reality, a huge amount of development, research and innovation has been invested over the years to enable today's range to meet the exacting requirements of major ports and airports throughout the world.

Gatic covers are cast to demanding specifications and held to tight tolerances that guarantee the gas, air and watertight fit, upon which the company's reputation is built. Whether single, duct or multi-span, covers and their frames are built in sets and finely machined to come together, in a precise, pre-determined order to achieve their seal. Appropriately installed, they can be expected to perform as intended for many decades if not indefinitely, with minimal servicing.

Today's Gatic covers are designed to deal with the harshest environments and to cope effectively with an anticipated, everincreasing vehicle weight and traffic volume well into the future. Their exact fit discourages the development of rock and subsequent wear.

Engineering expertise

Gatic makes a point of supplying all the help and technical support needed to ensure that each installation performs to its design potential. To this end, our design engineers are always available to discuss all technical aspects and offer practical advice at any stage of the project.



Surface Water Drainage

The Slotdrain concept emerged as a result of the worldwide success of Gatic covers. Many of the locations served by Gatic inspection covers were in parts of the world subject to extreme and often, rapidly changing climatic conditions. Gatic Slotdrain has been developed in conjunction with the airport sector so it closely fits with the demands of busy airports.

The danger of adverse weather causing flashfloods and bringing these vital facilities to a standstill was very real and the requirement for a system capable of handling huge quantities of surface water in a short space of time was obvious. Slotdrain was developed as a safe, robust yet unobtrusive way of solving this problem.

Slotdrain's unique profile enables it to efficiently deal with large or small amounts of water with equal ease and the system's modular design means it's relatively simple to install and maintain on site. A single high-capacity slot replaces the gratings of more conventional systems and the v-shaped cross-section of the channel maximises flow, whatever the level, encouraging a high degree of self cleansing.

Worldwide recognition

Today, ample evidence of the universal success and wide acceptance of Gatic Slotdrain can be seen from the number of ports and airports, all over the world, that rely on its capabilities. Some of them are listed on pages 7 and 8.

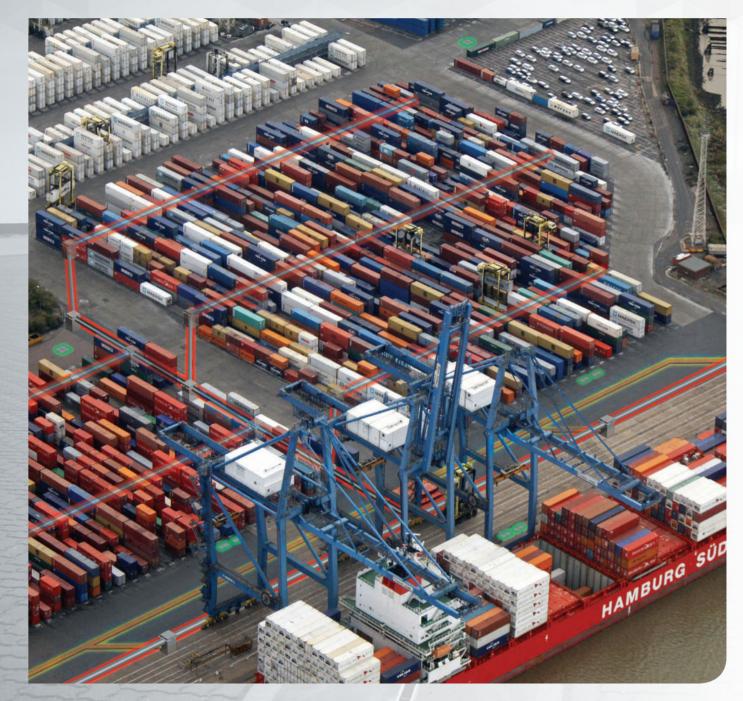
Special advice

Most of Gatic's installations around the world have been in place and operating successfully for many years. Our design engineers and technical advisors have a vast fund of knowledge and experience on which to draw. Whether with inspection facilities or surface drainage systems, our engineering teams are keen to rise to the challenge and help you steer your project through to the outcome you desire.

www.gatic.com

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A world of experience in Ports and Airports...



Gatic Slotdrain has been in use at Southampton Container Terminal for many years. Like the Gatic Inspection Covers, also installed at this location, it survives a daily pummelling from a fleet of heavily-loaded container handling trucks rushing to and from ships bound for the far corners of the globe.

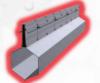
In times of adverse weather conditions, Gatic keeps the site safe and capable of operating at undiminished capacity.

Gatic Slotdrain is firmly established as the standard specification for new and refurbishment projects at similar facilities around the world.









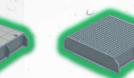
Gatic Slotdrain channel



Underground Collection and pipework access boxes



Gatic recessed inspection cover



Gatic solid-top inspection cover



Gatic Covers and Slotdrain have been used at Heathrow Airport for many years so it was no surprise when UltraSlot was chosen as the 'tried and tested' drainage solution for all external pavement areas at the new Terminal 5.

Designers incorporated a large number of Heavy Duty Outlet Boxes into the scheme. Fitted with Gatic F900 gratings, these are a quick and highly cost effective alternative to conventional manholes.

Heathrow Airport in addition to the long list of Civil and Military Airports that have found Gatic products to be the perfect answer to their access and drainage requirements.







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Infrastructure projects at Ports & Airports worldwide

Gatic Access Covers and Slotdrain systems have been used on many ports, airports and military bases around the world.

International Civil Airports

Europe - United Kingdom

- Heathrow (All Terminals)
- Gatwick
- Edinburgh
- Birmingham
- East Midlands
- Jersey
- London City
- Luton
- Newcastle
- Stornaway
- Robin Hood Airport Bournemouth
- Guernsey
- Manchester
- Stansted
- Glasgow
- Bristol
- 00 00
- Farnborough
- Leeds/Bradford
- Liverpool
- Manston Norwich
- Lydd Airport
- Londonderry (Derry) Airport, Northern Ireland
- Southampton
- Aberdeen Southend

Europe - Spain

- La Coruna Airport
- Fuerteventura Airport, Canary Islands
- Monflorite (Huesca) Airport
- Sevilla Airport
- Burgos Airport Alicante Airport
- Tenerife North Airport
- Girona Airport
- Reus Airport
- Valencia Airport (Various Phases) Vitoria Airport
- Barcelona Airport
- Murcia (Corvera) International Airport
- Malaga Airport
- Palma, Majorca Sevilla Airport, Spain

- Europe Sweden
- Arlanda Airport, Stockholm (Various
- Executive Jet Apron, SAAB, Sweden Skavsta Airport
- Kiruna Airport

Europe - Other Countries

- Shonefeld, Berlin, Germany
- Athens, Greece
- Paphos (Pafos) Airport, Cyprus
- Hamburg, Germany
- Oporto, Portugal
- Shannon, Eire
- Tallin Airport, Estonia
- Charles De Gaulle, Paris (A380 Terminal)
- Larnaca Airport, Cyprus Lisbon Airport, Portugal
- Dusseldorf, Germany
- Joao Paulo II, Azores Islands
- Orly, France
- Clui Airport, Romania
- Schiphol Airport, Netherlands

Middle East

- Bahrain International Airport (Various Phases)
- New Doha International Airport, Qatar
- Sharjah Airport, UAE
- Royal Airport Terminal, Bahrain
- Al Duqm Airport, Oman
- Abu Dhabi, UAE
- Baghdad, Íraq
- Sohar Airport, Oman
- Al Ain, UAE
- Jet Aviation Facility, Kuwait Airport
- Sakhir Airbase, Bahrain
- Sir Bani Yas Airport, UAE
- Al Maktoum (Jebel Ali) Airport, UAE
- Dubai Promenade Airport, UAE
- Dubai, UAE
- Doha, Qatar
- Fujairah Airport, UAE
- Muscat Airport, Oman Zirku Airport, UAE
- Madinah Airport, Saudi Arabia

- - Auckland International Airport

New Zealand & Australia

Gatic Slotdrain project

Gatic Access Covers project Projects that use both Gatic Access Covers and Slotdrain systems

- Christchurch Airport
- Wellington Airport
- Sydney Airport
- Edinburgh RAAF, Australia Rotorua Airport, New Zealand
- Hamilton Airport
- Blenheim Airport
- Launceston Airport, Tasmania
- Canberra Airport, Australia
- Perth Airport

- Chek Lap Kok, Hong Kong
- Kandahar Airport, Afghanistan
- Changi, Singapore
- Kota Kinabalu, Malaysia
- Hyderabad Airport, India
- Mumbai Airport, India
- Ashgabat, Turkmenistan Kuala Lumpur, Malaysia
- Bangkok, Thailand
- Brunei
- Bangalore Airport, India
- Delhi Airport, India Seletar, Singapore
- Cebu Airport, Philippines
- Clark Airbase, Philippines

- O.R. Tambo Airport, Johannesburg, South
- Alexandria Airport, Epypt
- Tripoli, Libya
- Tamale Airport, Ghana
- Kigali Airport, Rwanda
- Harare, Zimbabwe
- Lilongwe, Malawi Zanzibar, East Africa
- Maun Airport, Botswana
- Kotoka International Airport, Ghana Nairobi, Kenya
- Gaberone, Botswana

- Cairo Airport, Egypt
- Hurghada Airport, Egypt
- Niamey Airport, Niger
- Dar Es Salaam Airport, Tanzania
- Malabo Airport (Equatorial Guinea) Algiers Airport, Algeria
- Bugesera Airport, Rwanda

Other International Markets

- Podgorica Airport, Serbia and Mor
- Anguilla Airport, Virgin Islands Lynden Pindling International Airport,
 - Bahamas St. Maarten
- RL Bradshaw Airport, St Kitts Majuro Airport, Marshall Islands
- SSR International Airport, Mauritius Tocumen Airport, Panama
- Ottawa Airport, Canada
- St Helena Airport Mauritius Airport

United States

- McCarran Airport, Las Vegas
- Hickam Air Force Base, Hawaii
- San Francisco Airport
- Hartsfield-Jackson Atlanta Airport Fort Lauderdale Atlanta Airport Miami Airport
- Los Angeles Airport

Military Airbases

Europe - United Kingdom

- Coningsby Boscombe Down
- Kinloss
- Lossiemouth Marham
- Mildenhall
- Waddington Cosford
- Brize Norton
- Lakenheath Wittering
- Middle Wallop Valley
- Cardiff RAF St Athan, Wales
- **Other Projects** Hickam Air Force Base, USA Helicopter
- Ohakea Airbase, NZ Akrotiri Airbase, Cyprus
- Sakhir Airbase, Bahrain Udeid, Qatar
- RAF Airbase, Falkland Islands

Clark Air Base, Philippines

- RAF Airbase, Ascension Islands Minhad Airbase, UAE
- Sagr Port, UAE Tengah Airhase, Singapore
- RAAF Amberley, Australia Bauerfield Airport, Vanuatu

International Ports

Europe - United Kingdom

- London Gateway Port
- Southampton Container Port
- Birkenhead Ro-Ro Ferry Station Felixstowe Port Project
- Vosper Thornycroft Ship Yard, Portsmouth Port of Aberdeen
- HMNB Portsmouth Trinity Terminal, Felixstowe HMNB Coulport
- Immingham Docks Tilbury Docks
- Severn Bridge Project
- Associated British Ports, Port of Tyne HMNB Devonport
- Port of Liverpool HMNB Faslane Belfast Port

Europe - Other Countries

- Mallorca Port, Palmas Mallorca, Spain
- Container Terminal Tercat, Barcelona Port, Container Terminal TCB, Barcelona Port,
- Spain Toll Plaza, Dublin Port
- RAF Airbase, Ascension Islands Mersin Port, Turkey

- Södertälje Harbour, Sweden Dublin Port
- Limassol Port, Cyprus
- Mahon Port, Menorca, Spain El Ferrol Port, Galicia, Spain (various
- phases) Marina in Vilanova Port, Barcelona, Spain
- Sundsvall Harbour, Sweder Västerås Harbour, Sweden
- Gibraltar Port
- Ibiza Port Vilanova Port, Spain
- Vartan Port, Sweden Barcelona Port

Middle East

- Port Facility, Qatar Petroleum, Ras Laffan,
- Oatar
- Aden Port, Yemer
- Dubai, UAE
- Khor Fakkan, UAE

New Zealand & Australia

- Port Taranaki, New Plymouth, N.Z
- Sydney Container Terminal, Australia Coffs Harbour, Australia

Africa

- Dar Es Salaam, Tanzania Mombasa, Kenya

Tema Ghana

- Tripoli, Libva Misurata, Libva
- East Port Said, Egypt Maputo Port, Mozambique

Asia

River Trade Terminal, Hong Kong

Nacala Port, Mozambique

- Kuala Lumpur, Malaysia
- Changi Naval Base, Singapore Tanjung Pelepas, Malaysia
- Saigon Container Terminal, Vietnam International Cruise Terminal, Singapore Terminal 9, Hong Kong
- Kuching, Malaysia Sapangar Bay, Malaysia Gujarat Pipavav Port, India

Kai Tak Cruise Terminal, Hong Kong

- Other International Markets
- Bridgetown, Barbados
- Port, Seychelles Moin Port, Costa Rica
- Quetzal Port, Guatemala Guaira Port, Venezuela
- Callao Port, Peru Port Louis, Mauritius Mumbai Port, India
- Gujarat Pipavav Port, India Karachi Port, Pakistan Terminal Container PSA, Panama

ATI Manila Port, Philippines

Port of Singapore, Singapore

- Nakilat Ship Repair Yard, Ras Laffan, Oatar Erhama Bin Jaber Al Jalahma Shipyard,
- Marina, Yas Island, UAE
- Dammam, Saudi Arabia Doha, Qatar

Jeddah, Saudi Arabia

- Jubail, Saudi Arabia
- Sohar Port, Oman Jebel Ali Port, UAF
- Gatic Technical Helpline +44 (0) 1787 475151



Secure inspection access wherever its needed









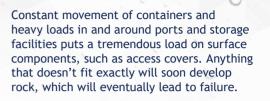












Gatic's renowned attention to detail means that our covers have been proven to stand the test of time in these environments.

All Gatic Access Covers for ports and airports are manufactured to Loading Group specification F900.

Gatic Assist Lift Covers allow 'one person' opening of a F900 load rated ductile iron





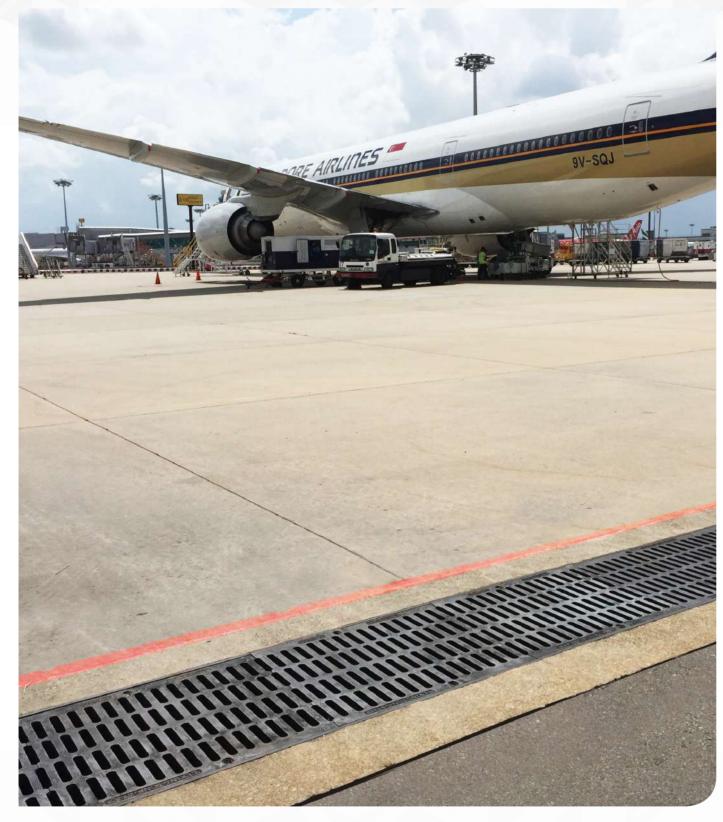






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Control of surface water drainage whatever the environment

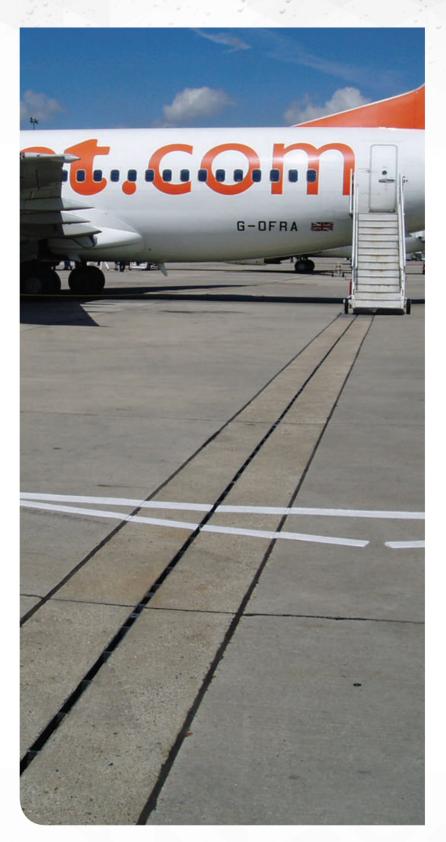
















The seemingly endless paved areas of ports and airports can collect huge volumes of surface water in a very short time.

Exposed locations, often in areas subject to wild extremes of weather, such as monsoons can throw up unusual challenges.

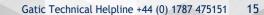
Fortunately, Gatic has some unusual answers. Slotdrain systems are designed specifically to tame such conditions as these.

Proven under F900, to easily withstand slow moving wheeled loads in excess of 20 tonne, their unique 'V' channel profile means they can maintain peak efficiency under all











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