

## **NOVING FORWARD**

MACHINERY TYPES \* STEERING SYSTEMS \* LOADING FACILITIES \* DOSING SYSTEMS \* INNOVATIONS \* PRACTICAL CASES \* BUSINESS DEVELOPMENT

BREMAT

#### VSE STEERING > p4

Unprecedented manoeuvring and outstanding weight division

#### PREMIX MORTARS > p26

Bremat supplies the right machine for loading, mixing and pumping

#### TRUCK CHASSIS > P8

BREM

PTO-driven machines in all conceivable configurations



« It is already clear that the year 2016 will go down as one of the most successful in Bremat's 50-year history. The building industry is in full swing and is bursting with challenges.

FORE-WORD

The order intake is higher than ever and we are pulling out all the stops to continue to meet market demand. We are now supplying products to 20 countries, which generates a huge amount of information: all customers have their own ideas about the best way of providing their specialist service. We are able to meet our customer's specific wishes and requirements by thinking and acting in terms of customer-oriented solutions.

In recent years we have focused mainly on improving our service. Our efficient logistics process means that we are virtually always able to deliver the parts required to any location in Europe within 24 hours. As well as our own locations in the Netherlands, Germany and Hungary we have a network of technical and commercial partners who ensure that our machinery downtime is minimised and customers are kept optimally informed about everything we have to offer.

The introduction of the ScreedFleet system in 2011 gave us many new ways of providing our customers with an even better service from a distance. Not only are we able to guickly and accurately diagnose faults, this also means that our customers are able to monitor the production process of their machinery from a distance and in real time.

Our products are developed, produced and delivered by a driven team of people who do everything possible to offer our customers nothing but the best. Whatever machine you choose, you get more than the best solution alone. The surrounding organisation and service are at least as important. That is why our aim is to continuously demonstrate our worth as a premium partner.»

AT HOME ON EVERY JOBSITE

Bremat specialises in the development and production of fully automatic mobile mortar installations.

Hundreds of Bremat installations are used every day all over the world for the production of conventional and self levelling floor screeds.

solutions for the mixing and pumping of a wide range of mortars such as EPS insulation mortar, foam mortar and PUR material.



Bremat also delivers customer-specific Bremat's mortar installations make the work more comfortable, efficient and profitable.



## PTO-DRIVEN MACHINES ON A TRUCK CHASSIS **A PERFECT WHOLE**

Throughout the years Bremat has gained ample experience in the installation of fully-automated mortar systems on the truck chassis in various configurations. Regardless of which truck manufacturer is chosen: together with the truck supplier we ensure that the machine combines perfectly with the used truck chassis. All relevant aspects such as the axle load division, the drive and the dimensions are discussed with the truck supplier and, if necessary,

the truck manufacturer. Driving the machine with a PTO (power takeoff) from the truck chassis does away with the need for a diesel unit. This makes it possible to build the machines in compact form without compromising on the loading capacity. Perhaps needless to say, these machines are just as complete as any other Bremat mortar installation.

#### F4.15

The most popular Bremat type for machines on a truck chassis is the F4.15. Bremat has already delivered dozens of these machines in Italy. The popularity can be attributed mainly to the exceptional Italian legislation. In Italy a GVW (gross vehicle weight) of 40 tons is permitted on an 8x4 truck chassis. The F4.15 contains a 15 m<sup>3</sup> sand and a 4 m<sup>3</sup> cement compartment, which makes it possible to transport and process a considerable quantity of material.

#### F3.09

The F3.09 is the most compact model, but just as complete as any other Bremat machine. This conventional floor screed installation was developed specifically for a Dutch flooring company that carries out

many projects in Amsterdam's inner city. The highly manoeuvrable three-axle truck makes it possible to maneuver through narrow streets and building sites that would otherwise be hard to reach. Since the machine has all the necessary materials on board, the work is not limited by logistics issues faced by external suppliers.

#### F5.17

This conventional mortar installation is assembled on a 5-axle truck chassis. The machine features a 17 m<sup>3</sup> sand and a 4 m<sup>3</sup> cement compartment. In view of the maximum GVW of 47-49 tons, the fiveaxle truck chassis is the most suitable for the Dutch market. This results in a net loading capacity of no less than 30 tons.



#### S4.10

The S4.10 is our self levelling floor screed installation that is assembled on a four-axle truck chassis. The machine features a 10 m<sup>3</sup> sand and a 13 m<sup>3</sup> cement compartment. By loading sand at the building location this machine combines a high daily productivity level with limited storage space.

Many configurations are possible. This includes the composition of the material compartments, the axle configuration and the loading systems. We are pleased to share our expertise with our customers and advise them on the right machine for their specific working method.



The Bremat F-series have everything on board for a substantial daily production of conventional floor screed

### **BREMAT F-SERIES** SUPERIOR CONVENTIONAL FLOOR SCREED PRODUCTION

The machines of the Bremat F-series have a proven track record as the most practical and efficient machines for the production of screed floors.

This is based on the horizontal production system. The installation does not have to be tipped for the dosing of materials. This has huge practical advantages: production is

possible in situations hindered by heights, such as large buildings, under bridges and on building sites with arches. The machine can also be used without difficulty on slopes and uneven surfaces. Bremat has manufactured hundreds of machines in the Bremat F-series since 2000. Throughout the years the company has



#### Screed production

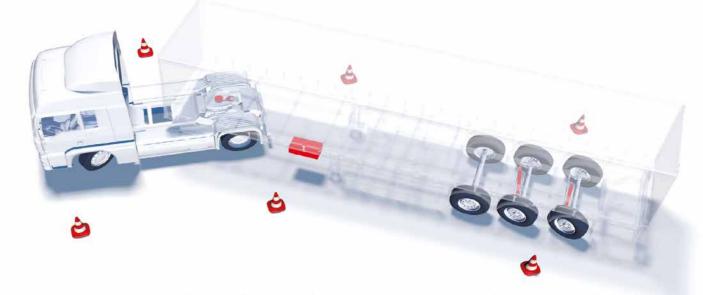
From the separate material compartments sand, cement, water and additives are transported with a horizontal conveyor system to the mixer unit. Here the materials are mixed and pumped to the workplace with air pressure.

#### **Consistently high quality**

The necessary materials are accurately weighed out using a 4-point weighing system so that the right mortar composition is certain to be obtained. Fibreglass, liquid, viscous and powder additives can also be dosed automatically.

#### Saving

Substantial savings on materials and wage costs can be achieved with the independent organisation of material transport, the bulk-purchase of materials and the fully automatic filling, mixing and transportation of conventional floor screed. worked continuously on improvements and new developments. We exclusively use premium quality materials and parts that are suitable for use in building situations. This minimises faults and unforeseen downtime. With the Bremat F-series you can count on demonstrably reliable technology and an efficient production method.



2

with VSE Steering the position of the axles is precisely calculated by measuring the angle between the truck and trailer

## TRAILERS WITH VSE STEERING EVERY BUILDING SITE ACCESSIBLE



Bremat has now been using the specially developed trailer chassis for over 16 years. By working intensively in partnership with various specialists we have developed trailer chassis that are a perfect match for the Bremat installations. These trailer chassis are equipped as standard with a steering system. The three-axle trailer features double rod controlled steering axles and an automatic lift axlee. This guarantees optimum driving properties with both partial and full loads and makes it possible to manoeuvre easily and safely to building sites that are difficult to reach.

#### **EPS mortar installations**

There are however some situations in which it is better to use a different steering system. This could be the case for uneven weight distribution or for extra-large installations. The VSE steering system provides an especially good solution for the latter category. Examples include the longer installations in the Bremat P-series, which are loaded with lightweight EPS granulate and a relatively heavier binder. With the VSE steering system the trailer follows the truck chassis even more directly, and more individual manoeuvres are made possible.

#### How does VSE work?

VSE Steering is an electrical/hydraulic steering system that can be installed for both 2 and 3 axle trailers. The VSE steering system is based on an electronically controlled hydraulic system. The stub axle is fitted with a VSE steering cylinder and an angle sensor.

These are controlled by the hydraulic system in the control cabinet. The kingpin is fitted with an angle sensor. This sensor measures the angle between the truck and the trailer. With this measurement the driven axles are steered highly



accurately at the correct angle, also depending on the speed being travelled at any given point in time. The sensors on the axle's fusee measure precisely whether the correct angle has been reached.

#### **Extreme situations**

The system automatically precisely calculates the ideal steering angle. However in special situations it may be more practical to correct the steering shafts manually.

This is done with the remote control that is supplied with the unit. That way all building sites can be reached!



## **CARRO-BEL GROUP** MARKET LEADER IN SCREEDING

The Carro-Bel Group is a Belgian specialist in floor screeding, floor insulation, plastering and floor finishings. The company was through the years.

The company regularly invests in machinery and materials. Quality always comes first. The investments in Bremat machines have increased with the growth of the company. No other company has as many Bremat mortar installations in operation as the Carro-Bel Group. We have supplied them with a total of 23 mortar installations for the production and pumping of floor screed, EPS mortar and, since recently, foam concrete. The Carro-Bel Group also has various combinations that can be used to load additional raw materials at the building site.

The fact that the Carro-Bel Group is highly regarded in in the Belgian construction industry is clear from a number of impressive figures: established in Ternat in 1994 and has undergone spectacular growth 27 floor screeding teams, 18 plastering teams and 4 insulation teams provide services every day. There are also 10 teams that provide floor coverings and 5 specialised in the supply of polished concrete floors. A total package of finishing services is offered by four departments under the names Carro-Bel, Plafo-Bel, Isofloor and Carro-Floor. The Carro-Bel Group consists of a total of 250 employees forming 65 driven teams. This results in an impressive produced screed floor surface of over 2,000,000 m<sup>2</sup> a year.





## **BREMAT S-SERIES** VERSATILE SELF LEVELLING INSTALLATIONS

#### Self levelling floors

Bremat's fully automated self levelling installations offer the user a flexible and efficient solution for the production and pumping of various self levelling mortars.

#### Consistently high quality

The sand, binder, water and additives are stored in separate raw material compartments before being transported to the mixer by means of a horizontal transport system. The basic raw materials are precisely weighed during the process to ensure the production of the correct mortar composition. A quick mixer then mixes the various raw materials into a high-quality self levelling screed. A supply mixer has been installed below the quick mixer. The supply mixer is equipped with a worm pump which pumps the liquid mortar to the place of work.

#### Efficient production

Substantial savings on materials and wage costs can be achieved with the independ-

Raw materials can be added without interrupting the production process





ent organisation of material transport, the bulk-purchase of materials and the fully automatic filling, mixing and pumping of floor screed. The S-series also considerably improves working conditions.

#### Customer-specific

Bremat produces mortar installations in numerous configurations. The configuration depends on the method and the client's specific wishes and requirements.



# READY FOR THE HEAVY WORK WIDESPREAD 6x2

Both transport and storage capacity play an important role in a machine's output. For optimum weight distribution and perfect manoevrability the chassis of the S3.20 XLS features a widespread axle configuration of three 10-ton BPW axles.



The S3.20 XLS is the ideal self levelling installation for markets such as the Netherlands and Scandinavia, where a GCW of 50 tons or more is permitted.

## I MADE NY CHOICE

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## EXTRA INSULATED MORTAR INSTALLATION **COME RAIN OR SHINE**

A machine that remains usable even in extreme winter conditions. That was one of the most important requirements of EPS Cement, a Swedish producer of EPS insulation mortar. Bremat took up the challenge

and came up with solutions to optimally protect the machine - the mixing unit and water pipes in particular - against sub-zero temperatures and snow. The first step was to use the kind of plating also used for refrig-

erated trailers. Light, thin and with top rate insulating properties. The mixing unit for this machine was also placed in an insulated housing.



#### P2.25 FE

The machine that has been given the name P2.25 FE Nordic Special is intended for the production of self levelling EPS mortar. This product contains a relatively large amount of water, which is precisely the component that is sensitive to freezing. It is especially for works with a cold cross wind that insulating the mixing unit and the water pipes makes the difference between producing or stopping work. The housing also protects the machine components against rain, snow and road salt.

#### Short but sweet

One of the client's important requirements was that the combination would not be longer than twelve metres. This does of course come at the expense of the volume of the raw material compartments. Other than with sand and cement, weight plays little or no role in the transport of EPS granulate. That is why the EPS compartment is as big as possible for the normal EPS mortar installations. The P2.45 FE (for self levelling EPS mortar) and P2.45 ZE (for semidry EPS mortar) have an EPS compartment of no less than 45 m<sup>3</sup> and a binder compartment of 10 m<sup>3</sup>. For the P2.25 is the binder compartment has remained the same, but the EPS compartment has been reduced to approx. 25 m<sup>3</sup>.

#### EPS blower

The fact that the machine is equipped with a special EPS blower means that EPS can be efficiently taken on board at the building site. The binder can also be pneumatically loaded if necessary. But this is rarely done in practice since 10 m<sup>3</sup> of binder is enough for a considerable day's production.



#### **BREMAT WINTER TEST** MORTAR PRODUCTION AT -28°C

prise that Scandinavian winters can be cold.

A Finnish customer of Bremat has made good preparations for this by providing his Bremat F3.20 floor screed installation with extra insulation. Insulating plates were fitted to the bottom of the raw material container, for instance.

It will probably come as no sur- That way the hot air from the diesel unit is kept more effectively in the area where the vital parts of the installation are located. But even so, being able to produce conventional floor sceed at -28°C is an extraordinary achievement.





In 2000 Bremat developed its first fully automated mortar installation for Chapewerken Braspenning Bvba. A good investment to be followed by many more.



## MORE THAN 50 YEARS' EXPERIENCE **IN MORTAR TECHNOLOGY**

At the end of the nineteen-fifties a company specialising in mechanical manure spreading machines was established in a village in the north of the Netherlands. The company was given the name 'Bredel', a contraction of the name of the initial founders, the Klein Breteler brothers and Delden, the place of establishment. After a good start with rapid growth there was a sudden decline when farmers started building

manure cellars and there was no longer any need for the system. That is why they switched to the rapidly expanding building sector, and in 1963 a machine was developed for the production of floor screed. Not only could this machine mix the components, it could also pump them using air pressure. This is the principle on which the Bremat machines still work to this very day.

Bart Nijhoff, Sales Manager at Bremat: « Some 50 years later the basic objective of our company remains largely the same: the development of smart technologies and equipment to make the work of the floor screeder lighter, easier and more efficient.»



#### Mortar types

A changing market calls for new products. As well as mixing and pumping semi-dry mortars there was increasing demand for machines that could pump liquid mortars. In the nineteeneighties Bredel developed various machines for pumping products such as self levelling screed, foam concrete and plastering mortar.

#### First steps in automation

One of Bredel's dealers played an increasingly important role for Fully automated mortar installations. the company as the years went by. This dealer from the south of the Bremat developed its first fully automated mortar installation on a Netherlands, T.H.O. De Vliedberg BV, was completely specialised in trailer chassis in the year 2000. screed pumps and had built up a large and loyal clientele over the Alexander: « In Belgium and Germany there were machinery builders vears. De Vliedberg sold most of the Bredel machines and also made an who had already built installations like these, but nobody did it the way active contribution to the ongoing development of the machines. that we had in mind: a container structure with a conveyor belt and Important developments included the patented rotating valve and screw conveyors that made it possible to dose and mix everything horithe automatic mortar dosing system. zontally. That turned out to be a stroke of genius. For the floor screeder it means being able to set up and dismantle the machine more quickly, easy loading, the ability to work under height-impeded conditions and to work safely on sloping or uneven building sites. »

In 1989 the first electrically-driven machine that could be connected to a two-chamber silo system was delivered. The floor screeder could configure the formula at the building site and leave the machine to do the rest.





Alexander Tinus, Engineer at Bremat:

« We have always believed that automation could offer many benefits for the floor screeding business. We developed this system at the time with a Dutch building materials supplier. It was the best possible solution in those days, and a 'good alternative to shovelling'. It wasn't long before demand for the machine grew.»

#### **Bredel becomes Bremat**

Bredel grew sharply throughout the years. This was especially due to the increasing sales of hose pumps.

In 1992 Bredel was taken over by a large American multinational. The company's mortar machinery branch became independent and was placed in a new company that was given the name 'Bremat'. By this time the company was focusing entirely on the building sector and more specifically on the production of mortar machines.

Bart: « A few years later the owners of T.H.O. De Vliedberg BV took over the company and Bremat was relocated to its current location in 's-Hertogenbosch. Given the expertise of De Vliedberg and the joint development of the automated screed pump, this made perfect sense. »

Many floor companies first had to get used to the idea of working with this type of installation. More and more of them gradually became convinced. This took place first mainly in the Netherlands and Belgium, but other countries followed later.

In 2006 Bremat delivered its 100th fully automated mortar installation. These days almost 500 fully automated Bremat installations are being used every day in more than 20 countries. This number is expected to continue to rise as more and more countries recognise the benefits of working with a fully automated mobile installation.



# The central location of Bremat Holland BV

One of main reasons why a growing number of customers are opting for a Bremat machine has to do with the reliability of our machinery and the certainty of being able to count on an appropriate service level.

Requests for technical support can usually be settled by telephone. The ScreedFleet system makes it possible for our technical staff to view the machine online and diagnose the problem from a distance. In many cases the machine operator is helped to solve the problem by telephone. If necessary local service partners can carry out any necessary repairs at the location. Combined with an efficient supply of spare parts this reduces downtime to a minimum.

#### Bremat Deutschland GmbH

Bremat is opening a new location in Germany to provide the growing number of German customers with an optimum and affordable service. 'Bremat Deutschland GmbH' serves the German market from a central location in Forchheim.

Bart Nijhoff is one of the two managers of Bremat Deutschland GmbH:

## THE BREMAT GROUP a company under development

It is not only our machines that have undergone strong development: so has our organisation.

Bremat's central production location is in 's-Hertogenbosch, the Netherlands. This is where the machines are assembled, some of the parts are stored and a number of special and/or essential parts are manufactured.

Bremat has set up a location in Hungary under the name Bremat Europe Kft. This location is used mainly for the production of parts. The size of the building and the central location in Europe also makes this location suitable for storage and logistics. This is how Bremat has improved its international service.





Each new machine is demonstrated

« We are setting out to create a full-service company here in Forchheim, a company that flooring companies can use for the repair and maintenance of all mortar machines, including those of other suppliers. We also offer additional services such as lease machines, sales advice and advice on financing and insurance. »

In mid-2016 we are hoping to also open the showroom and shop, which will make it possible to directly supply flooring tools, equipment and related products.





#### Combined road surfaces

Combination road surfaces are usually made by pouring cement-bound mortar over an open asphalt base. This fills the asphalt pores with mortar. The result combines the flexibility of asphalt with the strength of concrete. Combined road surfaces are used mostly for pavings and industrial floors and sites. They are used in areas where strict standards are set for the paving against dynamic and static loads, as well as the flatness of the paving.

# FULLY AUTOMATED MORTAR INSTALLATION FOR **PREMIX MORTARS**

For the Dutch company Multicell Bremat has developed a special mortar installation for mixing and pumping premix dry materials. The machine features a closed system with two internal raw product compartments with a content of 5 m<sup>3</sup> and 15 m<sup>3</sup> respectively. Three separate screw conveyors are used to add the compound to a quick mixer at the back of the installation. The quantity of material is accurately dosed over a 4-point weighing system. The right amount of water is extremely important to the production of combined road surfaces, and for that reason a flow meter is used to dose it.

After being mixed the mortar is poured in the lower mixer, from which it is pumped in a constant flow to the location using a worm pump (rotor-stator).

#### Filling system

The machine is equipped with filling and de-aeration pipes for loading the powder premix compound. The compound is pneumatically loaded from a silo (truck). A blower driven by a PTO is installed on the truck. The blower independently generates air pressure in order to transport the compound with air.





This makes it possible for Multicell to independently load the material at the building site without interrupting production.

The Bremat S2.15S is a production unit that can be used to load, mix and pump materials completely independently at different locations.

## **BREMAT C-SERIES** SPECIFIC SOLUTIONS FOR FOAM CONCRETE

Bremat has ample experience in the production of machinery developed specifically for the production and pumping of foam concrete.

A wide range of raw materials can be used for this purpose. We offer various solutions for measuring, transporting, dosing, mixing and pumping these ingredients and develop a machine that meets the wishes and

requirements of our clients. After all, the machine must be a perfect match for the user's production process. That is why the machines in the Bremat C-series are mainly customer-specific solutions. Based on our broad knowledge and experience we help our clients to compose a machine that is perfectly in keeping with their wishes and reauirements.

There are various ways of producing foam concrete. It is possible to use a premixed base mortar or to produce mortar from dry materials, usually supplied with silos. Bremat has ample experience with the development of machines for both production methods.



A foam mortar is produced on the basis of dry materials. The stock is kept in internal or external silos.



Truck mixers supply base mortar, which the machine foams and pumps.



#### 'Wet line production'

With the first production method a truck mixer supplies a base flowing mortar and pumps this into the machine's mixing hopper. A worm or hose pump is used to pump the base mortar to the workplace.

A foam generator produces foam and injects it into the mortar hose. The mixing process takes place in the mortar hoses while the foam mortar is being pumped to the workplace. The foam mortar can also be pumped through a static mixer. This increases the foaming of the mortar.

#### 'Dry line production'

With the second production method the base mortar is produced using individual raw materials. The raw materials are accurately dosed and mixed. The formula is easily configured using the switch cabinet of the mortar installation. This is how a mortar made of bulk materials is composed, mixed

and pumped according to the required specification. Binder and filler are automatically added to the mixer from silos or silo trucks. It is also possible to use external silos or to integrate silos in the installation.

#### Machine composition

Our foam mortar installations can be equipped with a worm pump or hose pump. In specific cases a duplex hose pump is fitted. The duplex solution offers high capacity but with a much lower power and space requirement than two separate pumps.

Regardless of the composition of your installation, we make sure that it is a perfect match for your method and individual reauirements.

#### Bremat foam generators

Bremat's foam generators consist of a compressor, a water pump and a foam dosing pump. If the foam generator is integrated in the machine it can be operated from the machine's control panel.

Standalone foam generator units are supplied with a control panel and in some cases a remote control. Bremat provides solutions for both hydraulically and electrically driven foam generators.





## THE RIGHT MACHINE FOR ANY APPLICATION

Bremat delivered its first fully automated mortar installation in Germany about 8 years ago. This F3.20 was supplied to the company Günther Schlag GmbH, a flooring company located in the Trier region.

'Fester Boden unter den Füßen' Schlag is a well-known flooring company. Not only in Germany's Moselle region, but also far beyond. The company has grown hugely throughout the years. It supplies a wide range of floors, centring on the screed. Related products and services are also supplied, such as insulation, foam concrete, filling layers and various types of designer floor under the brand name 'Variety Floor'.

#### Estrich Schlag

In 1981 Mr G. Schlag, together with his wife, established their own flooring company after passing the 'Meisterprüfung'. Through hard work and supplying good quality the company grew into one of Germany's biggest floor companies, employing some 60 people.



#### Automation

Increased scale, the use of the right technologies and investing in new machines have played an important role in the growth of the company. This has also been achieved by working with Bremat's fully automated mortar installations. Raw materials are purchased as bulk, which leads to substantial cost savings, and new opportunities are presented by efficient logistics solutions.

#### **Opting for Bremat**

Opting for a foreign supplier is not usually the first choice. At the time son Michael Schlag was already playing an important role at the company. He realised that the Bremat machine offered vital advantages over what other suppliers had to offer. There is no need for the machine to tip during production, and raw materials are automatically preheated. This makes it possible to produce efficiently on sloping surfaces, and to continue working for longer during wintery conditions. A number of reassuring meetings and practical tests instilled the confidence needed to take up with Bremat. Two new F3.20s were ordered, one of which

was used for a whole year at a large project in Luxembourg for the production of designer floors.

In the year after a Bremat S3.17 XL was ordered. This mortar installation is initially being used to produce self levelling screeds. Since the machine is also fitted with a foam generator, it is also capable of producing foam concrete. This product is used mainly for the production of filling layers. The S3.17 XL is also used to produce EPS mortar.

#### Bremat P-series

To meet the growing demand for EPS mortar and to produce it more efficiently Schlag



#### **Raw materials** are purchased as **bulk** material and transported to the building site, which increases **flexibility**.

decided in 2011 to invest in a machine especially for EPS mortar. The chosen machine was the Bremat P2.45 FE. This is a machine with a 45 m<sup>3</sup> EPS compartment and a 10 m<sup>3</sup> binder compartment. This installation gets the most out of loading and production capacity. A single load can produce a large quantity of EPS mortar.

The raw materials are stored as bulk at the industrial location that was opened in 2014. All machines can be centrally loaded here, which makes the production process even more efficient.



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