

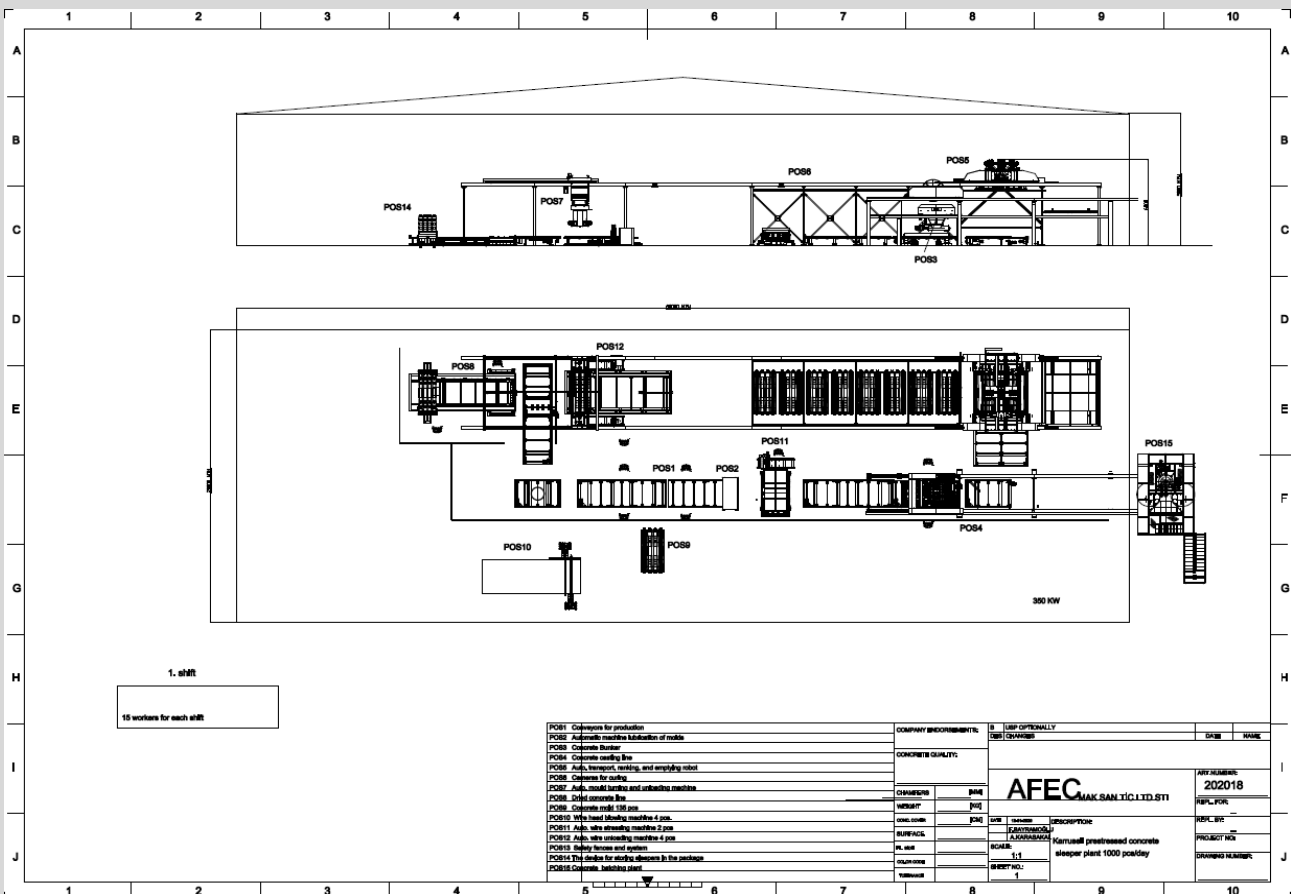
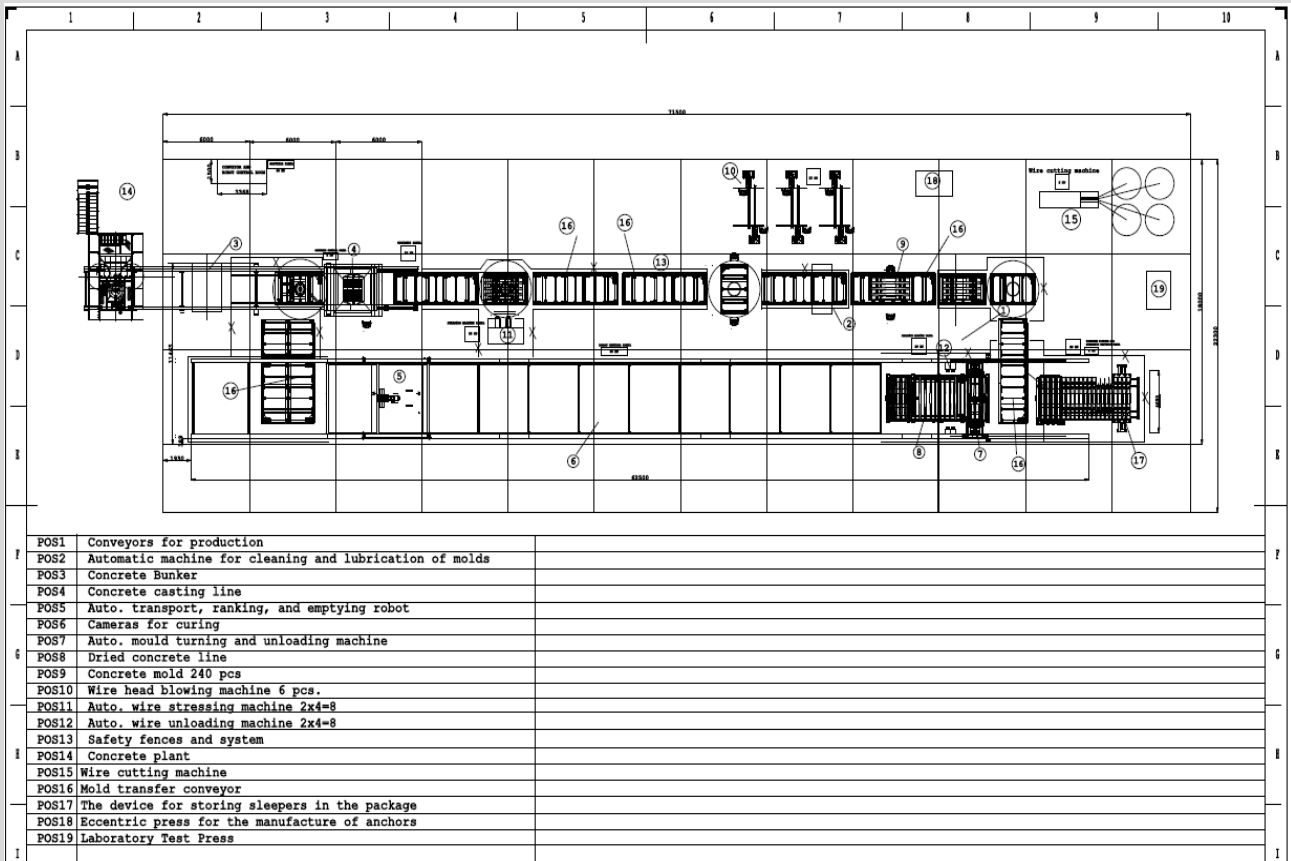


AFEC CONCRETE SLEEPER PRODUCTION PLANTS



AFEC Makina provides a wide range of services for many domestic and foreign railway manufacturers, from the installation of the new production line to the turnkey factory construction, from the modernization of the traverse units in use to the upgrading of capacities, as well as the training of technical personnel in line with the demands of the companies





CAROUSEL MAINLINE SLEEPERS PRODUCTION METHOD

The proposed system is the Pre-tensioned Carousel system with anchor plates and pre stressed reinforcement wires.

The carousel system works in a closed cycle where the moulds are in gangs; the stressing load is supported by the mould structure.

The moulds move along the production line to various stations where individual operations are carried out before moving on the next station.

In the present quotation the transport of the moulds to and from curing chambers it is foreseen by an automatic robot with moulds spreader.

The carousel working cycle is essentially constituted by:

The operations start when mould plier releases the emptied mould on the main chain conveyor for moulds,



PRESTRESSED CONCRETE SLEEPERS

Railway sleepers are superstructure elements that transmit the loads transferred from the railway vehicles to the rails to the lower layers, support the rails, protect the raceway and serve to withstand the horizontal and vertical such as structural performance, good durability, high service life (60 years), their use in railway lines is gradually increasing .

Afec Makina was established in order to export to abroad and become a brand in this sector by preventing imports related to this sector with 20 years of production experience of sleepers

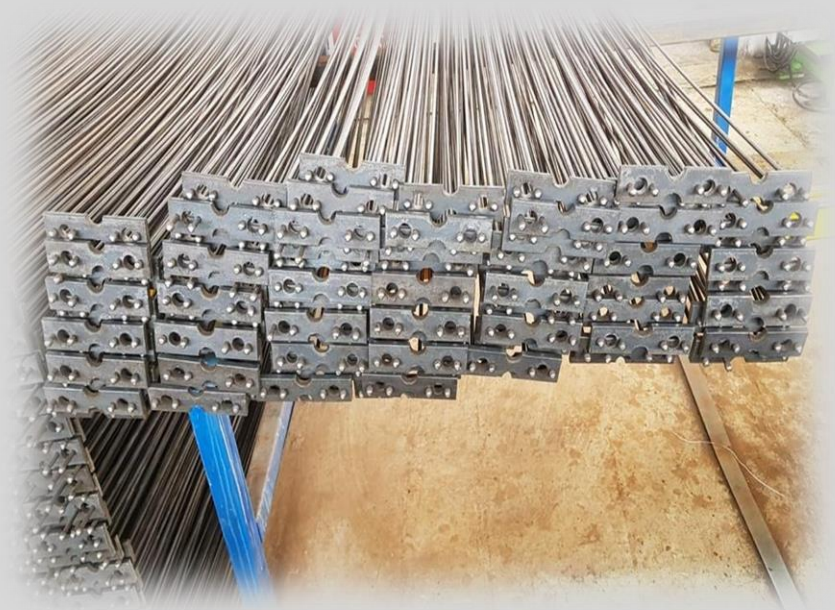
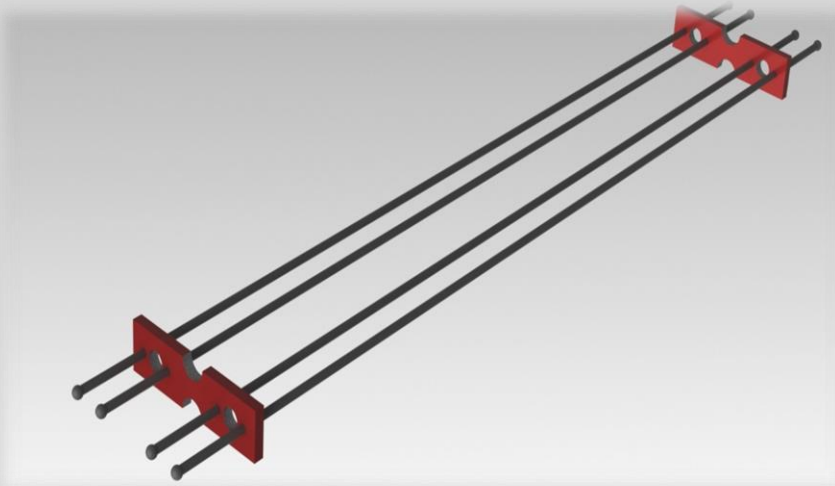
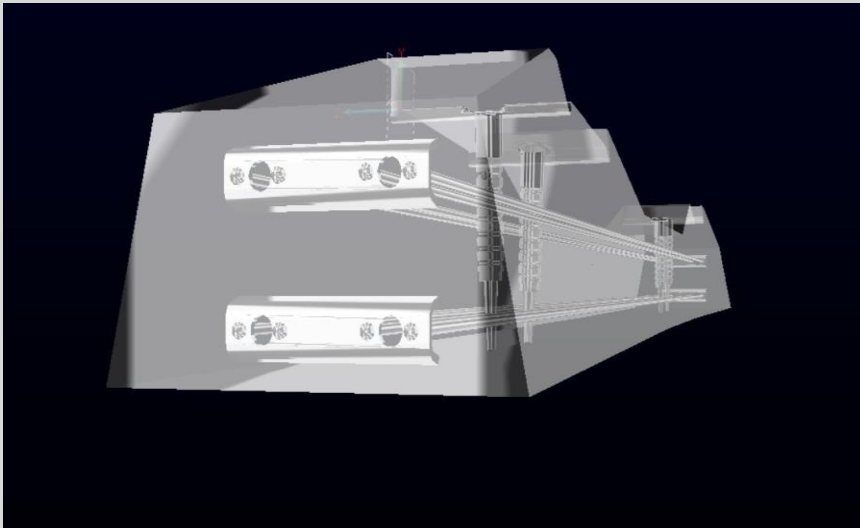


The proposed prestressing system is by 8 fully bonded indented wires.

The system uses indented or not indented pre-stressing wires which are buttom headed at the end by buttom heading machine.

The prestressing force is applied to each tie rods by stressing machine's hydraulic cylinders; tie rods are then automatically securely locked at the end of the process by the locking nuts to ensure the tensioning condition.

On client request the anchor plates could be offered.





AUTO SLEEPER STACKING MACHINE

At the end of the chain conveyor sleepers are packed by a sleepers stacker and moved by a forklift to the stock area



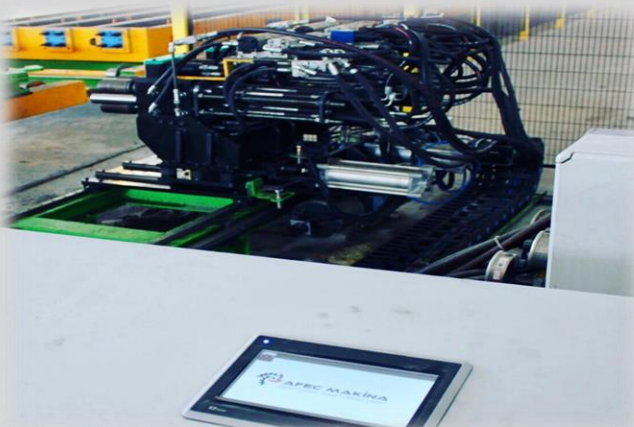
CONCRETE CASTING LINE

After the tensioning phase the mold is ready for casting: the turning trolley and linear trolley insure the moving of the mold to the casting station. The casting machine provides the concrete casting in to the mould.



AUTO MAIN CONVEYOR SYSTEM

In the conveyor system, the molds wait for the previous mold to finish and then proceeds automatically.



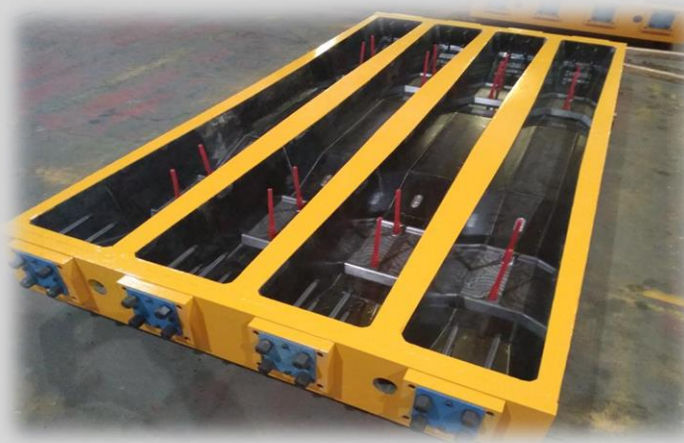
AUTO STRESSING(TENSIONING) MACHINE

The reinforcement cages are tensioned by the tensioning machine through the tie rods at the required force. The machine is provided with 1 tensioning head with 4 tensioning cylinders and the tensioning is provided simultaneously for each tie roads and for one cavity at a time.



AUTO MOLD RELAXING (DETENSIONING) STATION

After curing process is finished the robot put out the moulds from the curing chamber and transport it to the detensioning machine. De-tensioning is performed at the same time on all the tie rods of a mould and on both sides. The machine automatically performs de-tensioning on the 1st and repeats it on the other mould continually.



CONCRETE SLEEPER MOLD

Moulds according sleeper drawing. We are producing sleeper molds for all systems (Longline, Carrousel, Prestension)



REINFORCEMENT HEAD BLOWING MACHINE

Semi- automatic button heading machine, the reinforcement preparation will be ensured. Each reinforcement cage is composed by smooth wires and anchor plates.

The smooth wires are button headed at both ends, so that by pulling the anchor plates by means of the tie rods reacting on the molds, the smooth wires are subjected to tensile stress.



AUTO MOLD TURNING & HANDLING MACHINE

After de-tensioning, the conveyor moves the mold to the mould demolding station. The mould conveyor provide the mould in to the demoulding station where the mould 180° turned. Afterwards the de-moulding unit insure the stripping of sleepers. Once demoulded the sleepers, the mould conveyor transport back the empty mould ready to be transported to the main chain conveyor to restart the production cycle.



AUTO ROBOT FOR FILL IN AND TAKE OUT MOLDS IN TO CURING CHAMBERS

The robot takes the ready mould with wet concrete and moved it on the curing area where moulds will stay all along the required curing time.

The automatic crane performs also the emptying of the curing chambers once the concrete sleepers have been cured, by moving 2 moulds at a time from the curing area.



FENCE SYSTEMS

The production area and danger zones of the machinery are completely covered with fence systems.



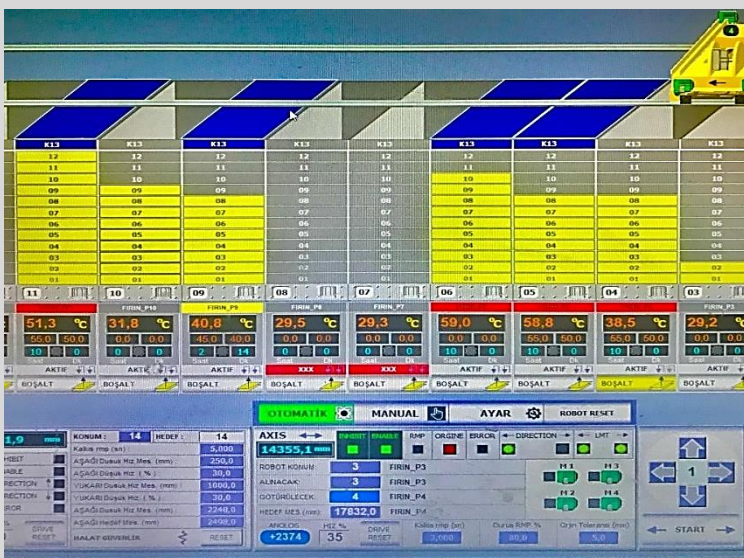
CONCRETE TRANSFER CUBE

Transports concrete from the concrete plant to the concrete casting machine automatically.

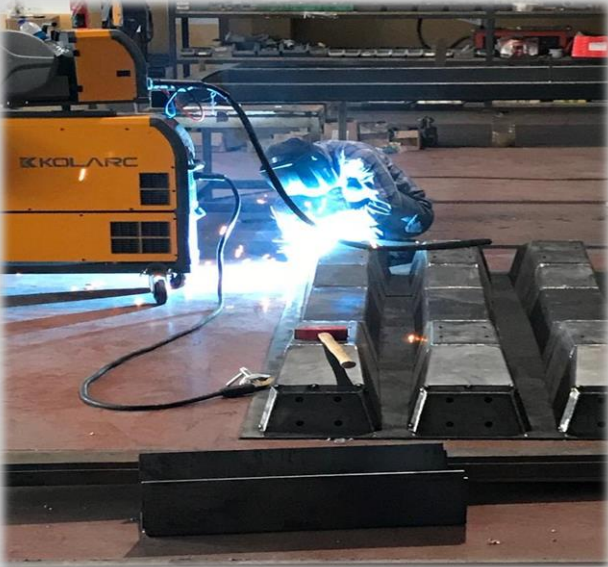


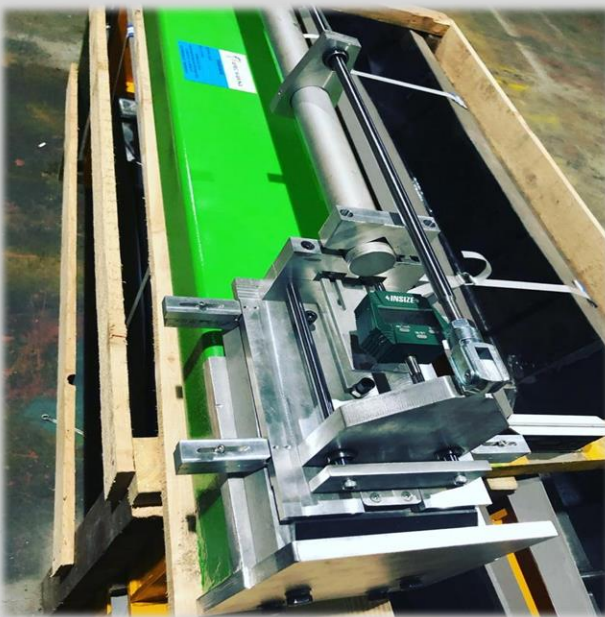
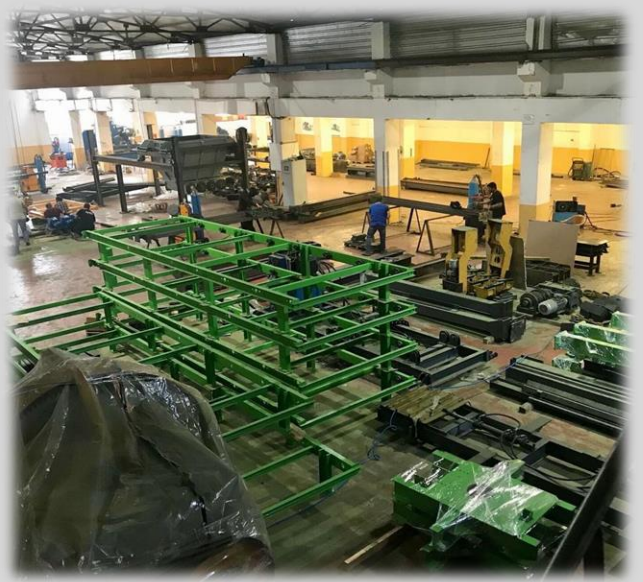
CURING CHAMBERS

The robot takes the ready mould with wet concrete and moved it on the curing area where moulds will stay all along the required curing time.



CURING CHAMBERS CONTROL PANEL





L 17 TYPE / AUSTRIA



L 6 TYPE / AUSTRIA



B 70 for POSTENSION / TURKEY



**MOULD PRODUCTION FOR
DIFFERENT SYSTEMS AND
DIFFERENT TYPES**

SLABTRACK MOLDS /TURKEY



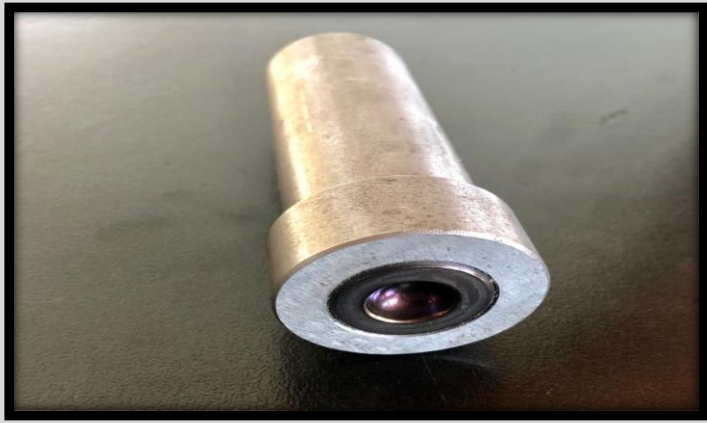
**MOULD PRODUCTION FOR
DIFFERENT SYSTEMS AND
DIFFERENT TYPES**

B 70 /KAZAKHSTAN





SPARE PARTS FOR PRODUCTION





**SPARE PARTS FOR
PRODUCTION**





CERTIFICATES

- ISO 9001:2015
- ISO 14001:2015

CERTIFICATE **IQR CERTIFICATION**

**AFEC MAKİNA İNŞAAT
SANAYİ TİCARET LİMİTED ŞİRKETİ**

OVAAKÇA ÇEŞMEBAŞI MAH. İSTANBUL CAD. NO: 655 A İÇ KAPI NO:1
OSMANGAZI / BURSA / TÜRKİYE

*Has been assessed and found to Comply with the Requirements of:
Denetlenmiş ve aşağıdaki standardın gerekliliklerine uygunluğu görülmüştür:*

ISO 9001:2015

*The Quality Management System is applicable to:
Kalite Yönetim Sistemi:*

PROCESSING OF STONE, CERAMIC, CONCRETE, MINERAL MATERIALS,
MANUFACTURING OF MACHINE TOOLS AND PARTS FOR COLD WORKING GLASS
(SAWING, GRINDING, POLISHING)

TAŞ, SERAMİK, BETON, MİNERAL MALZEMELERİN İŞLENMESİ, CAMI SOĞUK
İŞLEMELER İÇİN TAKIMI TEZGAHILARI İLE PARÇALARININ İMALATI
(TESTERE, TAŞLAMA, PARLATMA)

Certificate Number: QMS-11622 Initial Certification Date: 30.10.2020
Belge Numarası: QMS-11622 İlk Belgelendirme Tarihi: 30.10.2020

Certification Period: 3 Years Certificate Validity Date: 29.10.2021
Belgelendirme Periyodu: 3 Yıl Belge Geçerlilik Tarihi: 29.10.2021

IQR ULUSLARARASI BELGELENDİRME HİZMETLERİ LTD.ŞTİ.
Beşevler Mah. Kocayunus Sk. Aslan Hırlı İş Merkezi K:2 Nispetiye / BURSA
Tel: +90 224 255 00 16 Faks: +90 224 240 41 13 www.iqrcert.com e-posta:info@iqrcert.com

CERTIFICATE **IQR CERTIFICATION**

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*Has been assessed and found to Comply with the Requirements of:
Denetlenmiş ve aşağıdaki standardın gerekliliklerine uygunluğu görülmüştür:*

ISO 10002:2018

*The Customer Satisfaction and Complaint Management System is applicable to:
Müşteri Memnuniyeti ve Şikayet Yönetim Sistemi:*

PROCESSING OF STONE, CERAMIC, CONCRETE, MINERAL MATERIALS,
MANUFACTURING OF MACHINE TOOLS AND PARTS FOR COLD WORKING GLASS
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(TESTERE, TAŞLAMA, PARLATMA)

Certificate Number: ISO-04570 Initial Certification Date: 30.10.2020
Belge Numarası: ISO-04570 İlk Belgelendirme Tarihi: 30.10.2020

Certification Period: 3 Years Certificate Validity Date: 29.10.2021
Belgelendirme Periyodu: 3 Yıl Belge Geçerlilik Tarihi: 29.10.2021

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*Has been assessed and found to Comply with the Requirements of:
Denetlenmiş ve aşağıdaki standardın gerekliliklerine uygunluğu görülmüştür:*

ISO 14001:2015

*The Environmental Management System is applicable to:
Çevre Yönetim Sistemi:*

PROCESSING OF STONE, CERAMIC, CONCRETE, MINERAL MATERIALS,
MANUFACTURING OF MACHINE TOOLS AND PARTS FOR COLD WORKING GLASS
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(TESTERE, TAŞLAMA, PARLATMA)

Certificate Number: EMS-11645 Initial Certification Date: 03.11.2020
Belge Numarası: EMS-11645 İlk Belgelendirme Tarihi: 03.11.2020

Certification Period: 3 Years Certificate Validity Date: 02.11.2021
Belgelendirme Periyodu: 3 Yıl Belge Geçerlilik Tarihi: 02.11.2021

IQR ULUSLARARASI BELGELENDİRME HİZMETLERİ LTD.ŞTİ.
Beşevler Mah. Kocayunus Sk. Aslan Hırlı İş Merkezi K:2 Nispetiye / BURSA
Tel: +90 224 255 00 16 Faks: +90 224 240 41 13 www.iqrcert.com e-posta:info@iqrcert.com



CHARACTERISTICS OF THE USED MATERIALS IN THE SYSTEM

Sleepers Technologies

CONTACT

Faruk Bayramoğlu

ADRESS: Ovaakça Çeşmebaşı mah. İstanbul Cad. No:655A1 Osmangazi / BURSA **TURKEY**

TEL : + 90 224 267 16 54

GSM : + 90 543 698 89 98

FAX : + 90 224 267 17 54

WEB: www.afecmakina.com

e-mail : info@afecmakina.com

e-mail : faruk@afecmakina.com