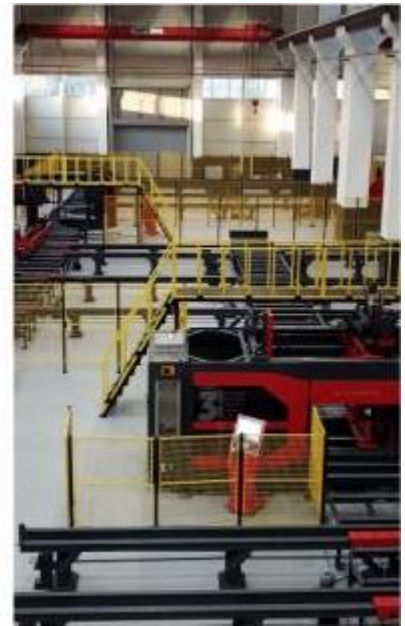


**3 ADM 1200**  
**THREE SPINDLE 10-AXIS**  
**CNC BEAM DRILL LINE**



## **ADM series making a difference in structural steel processing**

Akyapak has become pioneer in all metalforming fields its operating with the innovations it has made. Akyapak now comes to the forefront as one of the world's unique manufacturers for high technology ADM Drill Lines for structural steel processing. Akyapak's premium engineering solutions and customer-oriented culture makes it customers' first choise for structural steel processing worldwide.



## **Engineering & Design**

Akyapak also serves as a consultant to the customers who want to expand and advance equipment pool and enrich processes. Akyapak offers "tailor-made" steel processing lines and customized layout solutions with its strong engineering and desing expertise and ready to guide you through maximizing your productivity and make the most out of your shop floor.

## STANDARD FEATURES

### CAPABILITIES



DRILLING



MILLING



TAPPING



COUNTERSINKING



LAYOUT  
MARKING



BEAM



CHANNEL



TUBE



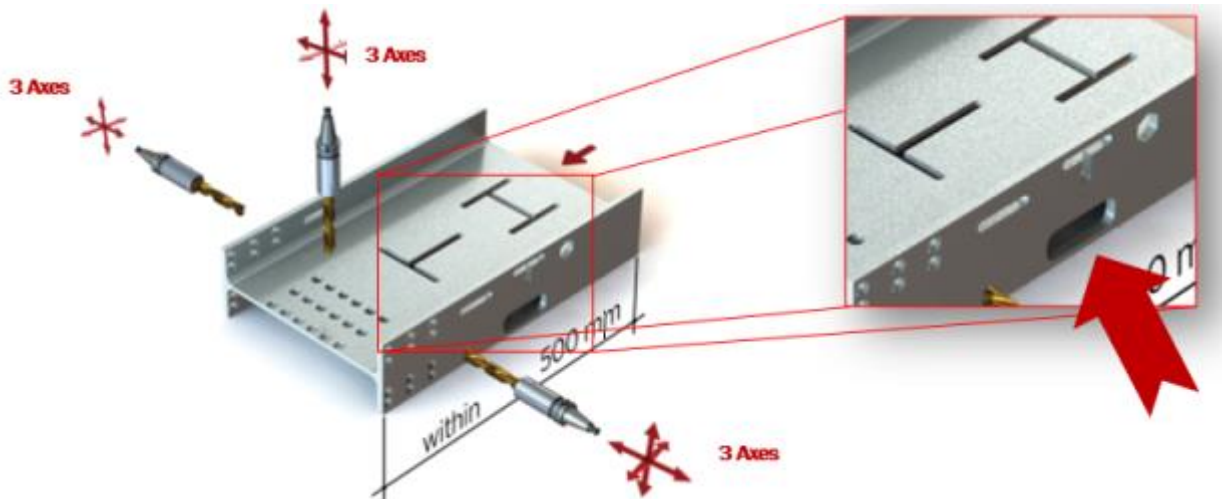
ANGLE



PLATE

### 500 MM SUB-AXIS FOR HIGH EFFICIENCY

The 3 ADM is equipped with sub-axis that enables independent control of spindles within 500 mm in the length of materials without repositioning. After making a hole in the beam, there is no need to drive the beam to make another hole in any axes. Each spindle can move independently in 3 axes while the beam is stationary. This feature reduces processing time considerably and increases the efficiency by minimum %50.



The independent motion ability enables for combined operations: While processing one side of the flange, it is possible to perform other operations (drilling, marking, tapping, milling, etc.) independently on the web and counter flange.

## FEEDING ARM

The feeding arm with gripper carries out longitudinal positioning of beams. The precise motion ability is guaranteed with a servo driven rack and pinion system. Positioning accuracy in 12 m is only  $\pm 1,0$  mm and in 500 mm sub-axis is  $\pm 0.2$  mm.



Positioning weight is max. 22 Tons and the profiles can either be driven forward and backward. Gripping thickness is max. 30 mm.

Short beams can also be processed with the feeding arm system compared to roller measurement systems. The positioning system is not effected by scale, rust and weather conditions and is therefore more accurate.

There is no need for an additional unit to drive the beams towards the saw station. The feeding arm can be turned 90 degree in order to grab the beam in a different position.



Max. speed | **25 m/min**

## FRAME

The base frame of the machine consists of robust steel profiles and frames of the motion axes consist of cast iron. The frame of the machine is designed with FEM simulation and thus mechanical solidity is guaranteed, optimizing suitable material selection, vibration and tension damping, and dimensional stability

### **ATC - AUTOMATIC TOOL CHANGER**

Three automatic tool changing units are provided; one for each spindle and each unit has four tool stations.

The ATC system enables the machine to change tools quickly and automatically, thus eliminating manual intervention and reducing downtime of the machine.

Capacity | 8 kg for each station. 4 tools per spindle, total 12 tools. (3 spindle x 4 tools)



### **SPINDLE MOTORS**

3 ADM is equipped with servo motors which provide precise motion capability. The 3 ADM also includes 3 high speed, powerful spindle motors. Mitsubishi (standard) or Siemens brands can be chosen.



## AXIS MOTIONS

The roller linear guidance system, which provides high rigidity and a load carrying capacity, is employed in the motion axes. This system supports all loads and moments from all directions. These components are chosen from high quality INA - Schaeffler Group® (Germany) products or the equivalents. Accurate positioning and high feed rates are guaranteed with servo motor driven ball screws. The components of the feeding arm are chosen from Atlanta® (UK), Schneeberger® (Germany), WHM Herion® (Germany) or the equivalents.



## HYDRAULIC POWER SYSTEM

7,7 kW (total) hydraulic power unit generates high working pressure. Hoses and connections used are resistant under high pressure hydraulic circuit. Easy intervention and troubleshooting are carried out thanks to the power hydraulic units from Parker (USA), Brevini (Italy), or equivalent.



## ELECTRICAL COMPONENTS

All critical electrical components used in the system such as thermic, contactor, relay, etc. are chosen high quality products by well known brands.



All components and drivers are kept at a constant temperature in the electrical enclosure with a standard air-conditioner.

### **INFEED AND OUTFEED CONVEYORS**

The heavy steel conveyors provide a steady structure for processing. The height of conveyors can be adjusted to the same level with each other. The outfeed steel conveyor rolls are motor driven, while the infeed conveyors are idler.

Height	800 mm (± 20 mm height adjustment)
Max. speed	15 m/min
Length	12 m (Standard)



### **MATERIAL CLAMPING SYSTEM**

Beams are clamped on the horizontal plane between rollers hydraulically and vertical clamping is performed hydraulically by pressure arms. Deflections and vibrations generated during drilling operation are prevented thanks to 16 hardened rollers that come in contact with the beam from both sides.



### **MINIMUM QUANTITY LUBRICATION (MQL)**

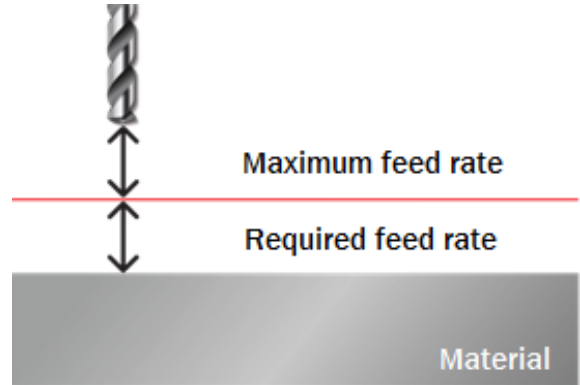
MQL minimizes the environmental impact using 100% natural, vegetable oil-based mixture and eliminating the need for cleaning coolant liquid. Almost-dry processing allows the machine to proceed to the next operation (welding, marking, etc.) without wasting time for coolant liquid disposal.

The 5 liter capacity coolant system for internal cooling of drilling tools and 2 liter of lubricant for installation of the machine are provided. More lubricants can also be provided upon request (5 lt. or 25 lt.).



### INTELLIGENT DRILLING PROCESS

Spindle speed can be adjustable stepless. The spindle approaches material with a maximum feed rate until it reaches the safety distance from the material. It is decreased to a required feed rate in safety distance and in this way, the drilling cycle time is reduced. AKYAPAK recommends Kennametal KSEM series tools.



### AUTO-LUBRICATION

The central lubrication system consists of a grease pump and main and intermediate distributors. 54 lubrication points on the machine are lubricated automatically and periodically by this system. It is of 1 liter capacity and designed to resist 250 bar oil pressure. All movable components work smoothly and have a longer lifetime thanks to auto-lubrication system from SKF (Sweden) Company.



### SAFETY FENCES AND INTERLOCKING DOORS

A safety fence is provided to prevent entering dangerous areas\*. The safety fence has various types and dimensions.

The interlocking door is integrated with safety fencing. When the sensor notices that the interlocking door is opened, all systems of the relevant zone will be shut down immediately.



\*The scope of the fencing system depends on the project, it might include additional charges based on the scope of supply.





### **SAFETY SWITCHES**

If the doors are opened during production, the machine stops automatically to provide a safe working environment.

### **WIRELESS REMOTE CONTROL**

The remote control enables the operator to control some of the machine's functions remotely and check process in safe. The remote controls vary in models and features.



### **CE AND INTERNATIONAL STANDARDS**

All Akyapak Drill Lines are in compliance with CE regulations and meet the following international standards.

Related Directives and Annex: Machinery Directive 2006/42/EC/Annex VIII, Low Voltage Directive 2014/35/EU.

- > EN ISO 12100:2010,
- > EN 12717:2001+A1:2009
- > EN 60204-1:2018





## **SERVICE AND SPARE PARTS**

With dedicated, specialized and experienced teams, Akyapak is with you even if we cannot be with you to provide unparalleled technical and spare part services whether on-site or remote:

- On-site installation, training and consultancy service by qualified teams of experts
- Quick solutions without loss of time thanks to spare part stocks
- Instant error diagnosis, data analysis and support\*
- Remote support with augmented reality technology through smart phone, tablet and smart glasses\*\*

For technical service and spare part inquiries, reach us at [service@akyapak.com.tr](mailto:service@akyapak.com.tr) and 0850 221 58 69.

\* Broadband internet connection is required for online services. The ethernet connection shall be provided by the customer to where the machine is installed.

\*\* Remote service with wearable augmented reality AUG is optional.

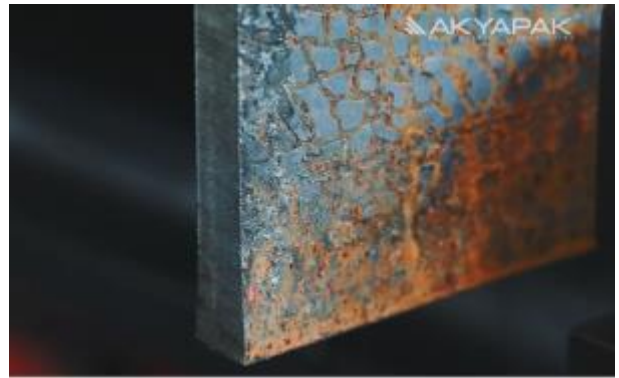


*Remote service option with wearable augmented reality technology AUG*

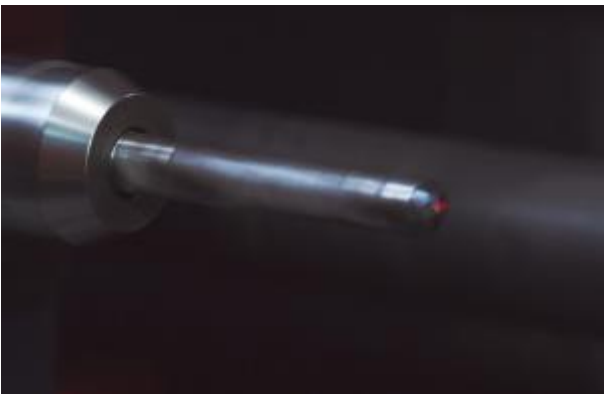
## OPTIONAL FEATURES

### **AUTOMATIC TOOL AND MATERIAL MEASUREMENT**

Material length, width and height are measured automatically by independent measurement systems provided on the machine. An operator sets the material type with dimensions in the program so that the software determines as to how many points the measurement of material height will be performed.



The flanges and web heights are measured automatically with a measurement probe. When a beam is clamped horizontally, the width of the beam is measured automatically with a measurement probe. Material length is measured by means of a laser sensor at the exit of the machine. The software stores those dimensions and thus determines the required real dimensions to start the process and more accurate results are obtained.



The tool length can also be measured automatically by a laser sensor, when a new tool is placed in the tool changer.

In this way, material dimensions and drill length are measured automatically, thus saving time and providing operating safety.

### SCRIBE MARKING TOOL

Marking with scribing tools on up to 4 surfaces of a beam is provided. The marking results are of high readable quality even after painting or blasting processes.

Two different tool options are available. Please look at the options section for details.



### DISC MARKING UNIT

Hydraulic press marking unit is provided as an option. Marking can be made on only an exterior surface of beams by hydraulic cylinder pressure. 40 characters which including letters and numbers are available on the rotating disk and is positioned by servo motor. The marking results are of high readable quality even after painting or blasting processes.

Characters height | 15 mm



### TRANSFER TABLES

Transfer tables are integrated into the infeed and outfeed systems to ensure that the material is at the most suitable position for starting the operation and to remove the processed material from the working area safely besides eliminating the need for crane operations. The work-flow safety and continuity are also guaranteed with transfer tables.



### LIGHT CURTAINS

Light curtains are provided upon request to detect approaches in a dangerous area defined. The multiple curtains covers the dangerous area instead of fence so it has less footprint in the shop and easy for in-shop handling operations. When a light curtain is

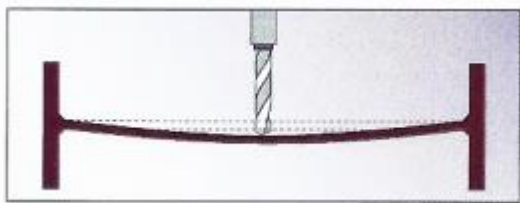
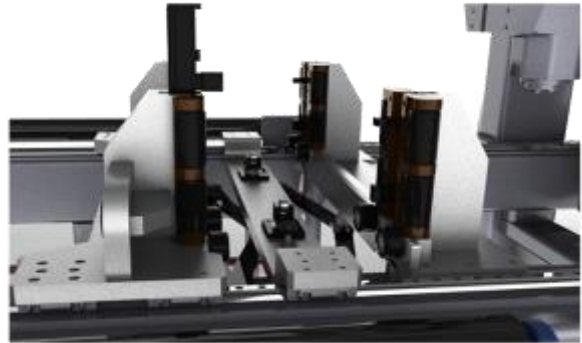


crossed, all systems of the relevant area will be shut down immediately.

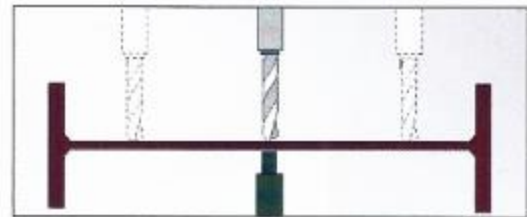
### **BOTTOM SUPPORT UNIT**

A bottom support unit is an optional feature provided on the machine to prevent deflections that occur on thin webs, plates, etc. It can be either hydraulic or mechanical. It is recommended if the profile is wider than 600 mm and for the web thicknesses less than 9 mm.

**The minimum width size in the capacity chart will be 200 mm if hydraulic unit is selected. Capacity chart is valid if the mechanical type is selected.**



**Without bottom support unit**



**With bottom support unit**

### **CHIP CONVEYOR**

The chips that pile-up in the machine during drilling operations can be disposed with an optional chip conveyor.



## CNC SYSTEM AND SOFTWARE



### **Mitsubishi C70 Series CNC iQ Platform CNC CPUs**

The Q173NCCPU enables CNC Control to be integrated with Sequence, Motion, and Robot automation systems. Also known as the C70 Series CNC Controller, an iQ CNC CPU system uses multi-purpose GOT1000 HMIs and on-rack I/O cards to minimize TCO on CNC line solutions.

#### **Key Features**

- Up to 16 axes with 4 simultaneously controlled axes per CPU, 2 CPUs per system
- 16.8k Block/min processing speed
- Streamlined production with reduced Tact Time and host information system linkage
- Uses GOT1000 HMI and iQ rack-based I/O card interfaces
- SSCNETIII benefits, including noise free, 50Mbps, fiber optic communication.
- 15" Mitsubishi Touch Screen Monitor
- 2000 KB or 1000 programs memory capacity
- Ability to resume operations in case of electric power cut-off.
- Available Languages; English, French, Deutsch



### **Siemens Sinumerik 840D SL**

The Sinumerik enables CNC Control to be Integrated with Sequence, Motion, and Robot automation systems.

#### **Key Features**

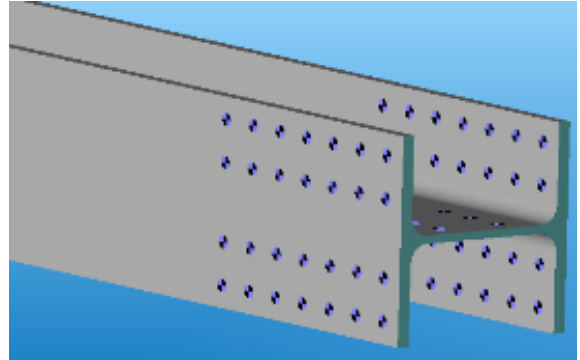
- Accelerated communication speed over the inter-CPU shared memory
- Up to 32 axes with 4 simultaneously controlled axes per CPU.
- Streamlined production with reduced Tact Time and host information system linkage
- 15" Touch screen Monitor-TCU HMI
- Profinet benefits, including noise free, 100Mbps communication
- 15 MB memory capacity
- Continuous to operation in case of electric power cut-off
- USB port for program backup
- Available Languages; English, French, Deutsch



## PROGRAMMING SOFTWARE

**lantek** Sheet Metal Solutions

**Lantek Flex3d SteelWork** is a new module in the family of Lantek Flex3d products focused on designing and machining of standard profiles. Lantek Flex3d SteelWork is a stand-alone product and it does not require any other additional Lantek software. Thanks to more than 20 years of experience in the sheet metal market, Lantek has been able to create a powerful off-line design and programming system for profile cutting machines in all their different versions: Sawing and drilling.



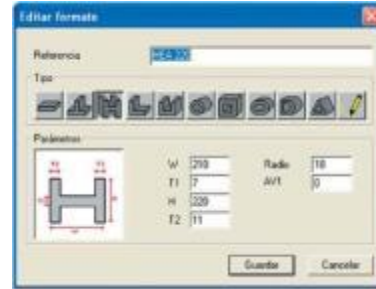
### Easy and Flexible Design

**Lantek Flex3d SteelWork** allows for 3D design in an intuitive and simple way, giving a real vision of the result that the user will obtain when drilling and sawing the profile on the machine. The user can create any type of standard profile in a very flexible way. It is a parametric system allowing the user to change the values of any of the operations made previously, including the possibility of changing the initial parameters of each profile (enlarge, shorten, etc.). Once the design process is complete, the user can simulate in 3D the head movement of the machine displaying each machining operation that is processed along the tube or the profile (profiling, drilling, and sawing). The user can also generate the NC file to send directly to the machine. Lantek Flex3d SteelWork, can be adapted to work with any profile or tube machine.

### Technical Characteristics

**Lantek Flex3d SteelWork** displays the exact profile and simulates in 3D each process, reducing to a minimum the possibility of errors. It offers the user the possibility to create standard sections. This eliminates the need for the user to duplicate the entry of information to create a profile. It is only necessary to select one of the standard base sections and insert the length and material. The system is based on database technology, allowing for the complete management of the different profile products and remnants and gaining really quick access to them.

It allows the user to import different formats including machining operations and make any modification for production. The system converts the DSTV, SAT, and CAM files into the native format for Lantek Flex3d which allows the user to apply modifications in a natural and easy way. It also has the possibility to modify, add, and delete any machining operation required for the profile. Lantek Flex3d can easily interpret the various properties of each file such as material thickness, material type, and quantity if supported by the imported format.



Tekla NC files can easily be imported to Lantek.

Flex3D to create CNC programs

### Simulation of Operations

Lantek Flex3d SteelWork allows you to simulate each profile operation such as, drilling, cutting, and the work zone. Lantek Flex3d SteelWork will automatically generate the NC file for each machine from the machined contours on each profile. Lantek Flex3d SteelWork detects any potential collisions automatically and gives the user the tools to modify them manually. The system will automatically avoid collisions where possible. Where collisions occur, the system will display them on the screen during the simulation phase. User can also make zoom, movements, rotations, and different axis positioning on the profile while viewing the simulation. The operator also can make drawings on Tekla and transfer it to Lantek Flex3d SteelWork.

Specification	Lantek Flex 3D SteelWork	Lantek Flex 3D* Steel Work SD Plus
Single Nesting	✓	✓
Multi Nesting	✗	✓
Inventory Management	✗	✓
Standard/Optional	Standard	Optional

**\*Strongly Recommended Especially With Bandsaw**

### DSTV, SAT & CAM FILE IMPORT

Lantek Flex3d SteelWork can import data generated by 3rd party CAD systems used for designing structures such as DSTV, SAT, and CAM files. **The DSTV file import is a standard feature for any Lantek packages.** Importing feature for all of other files such as SAT and CAM is optional.



## TECHNICAL SPECIFICATIONS

### DRILL UNIT

<b>Number of drill heads</b>		3
<b>Drill diameter - Ø</b>	mm	(Carbide and U-drill) 8 – 40 (Only with U-drill) 40 – 50
<b>Thread Tapping</b>	mm	M10 – M24
<b>Drilling thickness</b>	mm	5 – 100*
<b>Tool Holder</b>		BT40 or ISO40**
<b>Spindle speed</b>	rpm	50 – 3000 stepless
<b>Spindle power</b>	kW	22 (S1) and 26 (S6)
<b>Spindle torque</b>	Nm	280
<b>Spindle feed rate</b>	mm/ min	20 – 2500
<b>Vertical spindle strokes X, Y, Z</b>	mm	1450 – 501 – 920
<b>Horizontal spindles' strokes X, Y, Z</b>	mm	501 – 525 – 700

### ROOM SIZE

<b>Max. room width</b>	mm	1250
<b>Max. room height</b>	mm	(if clamp stoppers dismantled) 700
<b>Max. room height</b>	mm	(with clamp stoppers) 520

### MATERIAL SIZE

<b>Min. beam size</b>	mm	200 x 80
<b>Max. beam size</b>	mm	1200 x 500
<b>Standard line for length – Min.</b>	m	2
<b>Standard line for length – Max.</b>	m	12 (Total: 12,5 m)
<b>Weight per linear meter</b>	kg/m	750

\*Send us your part drawings to validate cooling type which may vary based on application.

\*\*BT40 is supplied as standard if ISO40 not requested.

## CAPACITY TABLE

<b>ANGLE</b>	minimum*	mm	80 x 80 x 8
		inch	3.15" x 3.15" x 1/3"
	maximum	mm	250 x 250 x 28
		inch	9.84" x 9.84" x 1.1"
<b>U CHANNEL</b>	minimum*	mm	80 x 45 x 6
		inch	3.15" x 1.77" x 1/4"
	maximum	mm	400 x 110 x 14
		inch	15.74" x 4.33" x 0.55"
<b>HEA</b>	minimum	mm	96 x 100 x 5
		inch	3.77" x 3.93" x 0.19"
	maximum	mm	990 x 300 x 16,5
		inch	38.9" x 11.8" x 0.64"
<b>HEB</b>	minimum	mm	100 x 100 x 6
		inch	3.93" x 3.93" x 1/4"
	maximum	mm	1000 x 300 x 19
		inch	39.3" x 11.8" x 0.74"
<b>HEM</b>	minimum	mm	120 x 106 x 12
		inch	4.7" x 4.1" x 0.47"
	maximum	mm	1008 x 302 x 21
		inch	39.6" x 11.8" x 0.82"
<b>H WELDED PROFILE</b>	maximum	mm	1200 x 500 x 50
		inch	47.2" x 19.68" x 2"
<b>IPE</b>	minimum*	mm	80 x 46 x 3,6
		inch	3.14" x 1.81" x 0.14"
	maximum	mm	770 x 268 x 15,6
		inch	30.3" x 10.5" x 0.61"
<b>IPN</b>	minimum*	mm	80 x 42 x 3,9
		inch	3.14" x 1.65" x 0.15"
	maximum	mm	550 x 200 x 19
		inch	21.6" x 7.87" x 0.74"

\* With welded extension. It is 100 mm if there is no welded extension.

<b>SOLID BAR</b>	minimum*	mm	100
		inch	4"
	maximum	mm	1200
		inch	47.2"
<b>SQUARE TUBE</b>	minimum*	mm	80 x 80
		inch	3.15" x 3.15"
	maximum	mm	500 x 500
		inch	19.68" x 19.68"
<b>RECTANGULAR TUBE</b>	minimum	mm	40 x 80
		inch	1.57" x 3.15"
	maximum	mm	1200 x 500
		inch	47.2" x 19.68"