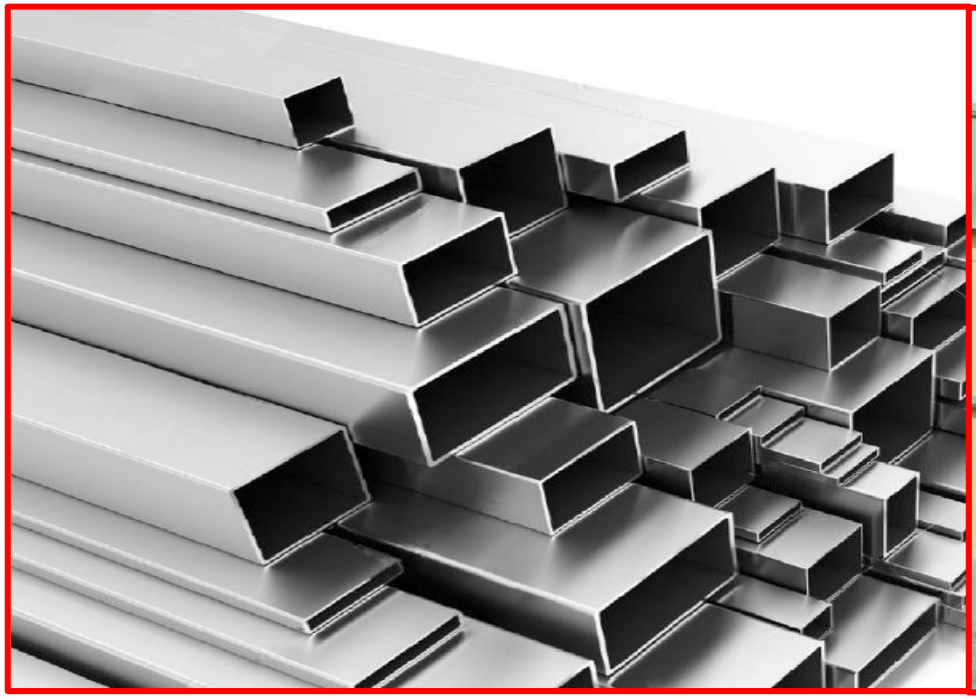
FUTURE Pre-Qualifications

General information & Standards

Formwork & Aluminum Industries L.L.C.



About us

FUTURE Aluminum industries is a well renowned company that has been in the market for 20 years, providing exceptional products, advanced manufacturing equipment, state of the art quality procedures and satisfaction driven service. FUTURE Aluminum industries specialize in extruded Aluminum profiles from the simplest to the most complex, to be utilized in a variety of applications, From Structural components to decorative and architectural elements.

FUTURE Aluminum industries extrusion plant is capable of producing:

- Aluminum Extrusion 12,000 tons/ year.
- Powder Coating 10,000 tons/ year.

"**FUTURE** aim is to exceed our customers' expectation through state of the art products and manufacturing processes.

To pursue an aggressive outgoing research and development program thus insuring **FUTURE** as a leader."

-Marouf Mustafa Badran
Chief executive officer

Our Prime Objective

The prime objective of **FUTURE Aluminum industries** is to guarantee the best quality and logistics of supply, our company has established a very high standard quality check system in guaranteeing that all extruded profiles are of the highest caliber.

FUTURE Aluminum industries use only the most modern, computerized, state of the art Italian machinery for producing the best quality Aluminum profiles.

FUTURE Aluminum industries sophisticated extrusion, Water quenching and powder coating machinery, guarantees that every profile From **FUTURE**, regardless of the complexity is of the highest standard and caliber.

Capabilities and Facilities

We are equipped with the following world class equipment.

- Italian Origin 2500 MT Extrusion Press with 4S (Stem Shift Short Stroke) technology with an annual capacity of 10,000MT to 12,000 MT
- Italian Origin Hot Log Shear which allows to reduce both material inventory and scrap generation
  because it cuts the billets to correct length as needed targeting maximum yield.
- Italian Origin High-Tech Water Quenching System to meet all customers requirements.
- Italian Origin log Oven with designed capacity of 4,500 kG of output per hour.
- Taper quench of billets for achieving quality extrusion by maintaining constant extruding temperature and very much essential for Aluminium extrusions.
- Italian origin Intense runout cooling system for both hard & architectural alloys.

Capabilities and Facilities

We are equipped with the following world class equipment.

- Double puller operation for improved productivity & short idle time.
- Italian origin Stretcher which deliver precise accurate stretching which enhances profile quality and keeps scrap to a minimum.
- Precision profile cutting finish saw delivers a highly accurate cut with accuracy, safety and easy to use and with maximum cutting length up to 9000mm and extendable further on special cases.
- Italian Origin Ageing oven are designed to deliver rapid complete aging of every profile in every batch which translates into maximum profile quality.
- Five Die ovens are engineered for quick and uniform heating resulting in less strain on the press and better quality for extrusion.
- Fluidized Nitriding furnace to enhance the surface quality of the products.

Testing Equipment

- Digital Measuring Instruments
- Bevel Protractor
- Webster Hardness Tester
- UTM Machine
- Digital hardness Tester

Extrusion Process

- Extrusion is a process which occurs when a preheated homogenized aluminum billet is forced through shaped
orifices in hardened dies by means of high longitudinal pressure.
- Dies are heated and loaded into press. The appropriate size billet is preheated to specifications and introduced into the press. The billet is forced through the die opening by means of a ram to obtain the desired hollow or solid profile. The pressure and the frictional forces acting on the billet cause it to reach temperature in excess of 500°C.As extrusion exit the press it is cooled at a specific rate to ensure quality finish.
- The extrusion is drawn down in run out table by means of a puller and is transferred to the cooling table where it is allowed to cool prior to stretching.
- The extrusion is cut to desired length and placed in baskets in such a way as to allow good air flow around during ageing process to obtain desired mechanical properties.
- Rigid controls are maintained to ensure that temperature are within specified parameter throughout the extrusion process ensuring a high quality metal and consistent finish. Tolerances on profiles are regularly checked and recorded.

Ordering Information

1. Profile drawing and sample submission:

- Purchaser information required for profile (section) drawing preparation.
- The purchaser has to submit a cross-sectional drawing of the profile clearly showing the dimensions with tolerance. Instead the purchaser may also send the profile samples, QAEC shall prepare the profile drawing with reference to sample dimension measurement.
- Where profiles are intended for assembly with other parts, it is recommended that the manufacture should be provided with the drawing with details of assembly requirement (eg: Slide, Snap fit).
- Purchaser has to provide the significant/exposed surface of the profile based on the finish surface and
  end use. The significant/exposed surface shall be marked with dotted lines in the profile drawing.
- QAEC shall send the profile drawing for approval to purchaser. The order processing shall be done only after the receipt of approved drawing from the purchaser.

Ordering Information

First Article sample submission and approval to purchaser

Upon receiving the approved profile drawing from the purchaser, QAEC shall proceed with manufacturing of extrusion dies and trial extrusions.
QAEC shall submit the trial samples (First Article) with the dimension report (if required) to purchaser forapproval.

Sample size No of :250mm long(as required by the purchaser)
pieces Finish of : As required by purchaser
pieces : As required by purchaser

Note: At this stage 250mm samples are submitted for dimension, angularity, and flatness approval only. Purchaser to send the approval of the sample to QAEC specifying '**APPROVED**' on the drawing only after which the die shall be forwarded for extrusion.

Quality Policy

It is the objective of FUTURE to satisfy the quality and delivery requirements of our customers at competitive prices. We will measure our performance in meeting customers' requirements and work with them to continually improve the service that we provide.

The quality of service that FUTURE supplies to its customers is a major benchmark for the performance of the company.

FUTURE will always strive to provide the customer with the highest standard of service available. Our objective is to use the process of continual improvement within the company to ensure that these standards are continually raised.

Suitable training, manning levels and equipment will ensure that all of the staff at FUTURE are aware of and best able to
satisfy the needs of our customers.

This Quality Policy will be reviewed regularly, to ensure its continued suitability for the company.

The management is completely dedicated for the continual improvement of the quality management system and to address the risks identified in context of the organization.

With this statement, the management at FUTURE commits all employees to perform their tasks in accordance with the instructions laid down in the Quality Management System (ISO 9001:2015) so that we can be sure that we meet our customer's needs as well as any statutory or regulatory requirements.

Quality Assurance

At **FUTURE** we practice a strict Quality Control Procedure & Methods. The Quality Assurance System is certified to ISO 9001: 2008.

The Quality Assurance & Control Department is managed by a Manager under whom there are Q.C Supervisor & Quality Controller Inspectors. The team ensures that all required test & checks are carried out.

The normal & routine inspections are carried out for;

- Dimensional Checks.
- Deviation or Flatness, Sharpness, Angularity etc.
- Visual – Surface Inspection.
- Hardness Check.

There is a system which adequately controls the reports at every check point and thereby maintains traceability at all points of manufacture.

For powder coating jobs, company is equipped with a modern full scale laboratory and all in line and panel
tests.

Safety Policy

FUTURE subscribes to the Health & Safety Policy in place and is committed to implementing and maintaining a Health & Safety System conforming to OHSAS18001:2007 throughout the whole of the company's undertaking and at all of its premises and work sites.

Our aim is to monitor and continuously improve on our health & safety performance, and the company is committed to achieving this by:

- Complying with all relevant health & safety regulations and other legislative documents and/or requirements, codes of practice, corporate policies and protocols, as a minimum.
- Co-operating with Client, Local Authority and Housing Associations with regards to all aspects that could or have an adverse effect on the health & safety and the protection of individuals, groups and property.

Safety Policy

- Develop and implement Safe Working Practices in all undertakings, by the provision of Information, Instruction & Supervision to ALL Employees as well as Contractors tasked to carry out undertakings on the company's behalf, this is achieved by the provision of:
  - Generic Risk Assessments
  - Site Specific Risk Assessments
  - Work Method Statements
  - COSHH Assessments
  - Any Other.

Safety Policy

- Develop and maintain continuous improvement of our health & safety performance, addressing all aspects of works, which include:
  - Joinery Operations.
  - General Operative Operations.
  - Stores Operations.
  - Trainees & Apprentice Supervision & Management.
  - Any other.
- Fully integrate health & safety considerations into all aspects of the company's undertakings to minimize any adverse effects, as far as is reasonably practicable.

Safety Policy

- Internal audit and review of the health & safety management system shall ensure that the system remains
- effective and meets OHSAS 18001:2007 standards throughout the Company.
- This Health & Safety System Manual will be made known to all our employees and to members of the public and interested parties upon request.

Certificates

- ISO 9001:2015 (Quality Management Systems)
- ISO 14001:2015 (Environment Management System)
- OHSAS 45001:2018 (Occupational Health and Safety Management Systems)

Alloy Specification & Mechanical Properties

Chemical Composition

ALLOY	Limit	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	Aluminium
6060	min.	0.30	0.10	-	-	0.35	-	-	-	-	Remainder
	max.	0.60	0.30	0.10	0.10	0.60	0.05	0.15	0.10	0.05	
6063	min.	0.20	-	-	-	0.45	-	-	-	-	
	max.	0.60	0.35	0.10	0.10	0.90	0.10	0.10	0.10	0.05	
6061	min.	0.40	-	0.15	-	0.80	0.04	-	-	-	
	max.	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	0.05	
6082	min.	0.70	-	-	0.40	0.60	-	-	-	-	
	max.	1.30	0.50	0.10	1.00	1.20	0.25	0.20	0.10	0.05	

Alloy Specification & Mechanical Properties

Mechanical Properties

Alloy 6061							
Temper	Dimensions mm t	R_m MPa		$R_{p0.2}$ MPa		A %	$A_{50\,mm}$ %
		min.	max.	min.	max.	min.	min.
T4	t<25	180	–	110	–	15	13
T6	≤5	260	–	240	–	9	7
	5<t ≤25	260	–	240	–	10	8

6063							
Temper	Dimensions mm t	R_m MPa		$R_{p0.2}$ MPa		A %	$A_{50\,mm}$ %
		min.	max.	min.	max.	min.	min.
T4	t≤25	130	–	65	–	14	12
T6	≤10	215	–	170	–	8	6
	10<t ≤25	195	–	160	–	8	6

Alloy 6082							
Temper	Dimensions mm t	R_m MPa		$R_{p0.2}$ MPa		A %	$A_{50\,mm}$ %
		min.	max.	min.	max.	min.	min.
T4	≤25	205	–	110	–	14	12
Open profile	≤5	290	–	250	–	8	6
T6	5<t ≤25	310	–	260	–	10	8
Hollow profile	≤5	290	–	250	–	8	6
T6	5<t ≤15	310	–	260	–	10	8

Alloy Specification & Mechanical Properties

NOTE:

- For material of such dimensions that a standard test specimen cannot be taken, or for material thinner than 1.6 mm the test for elongation is not required.

- Webster hardness shall be used as a reference only. For test conformance tensile strength shall be considered.

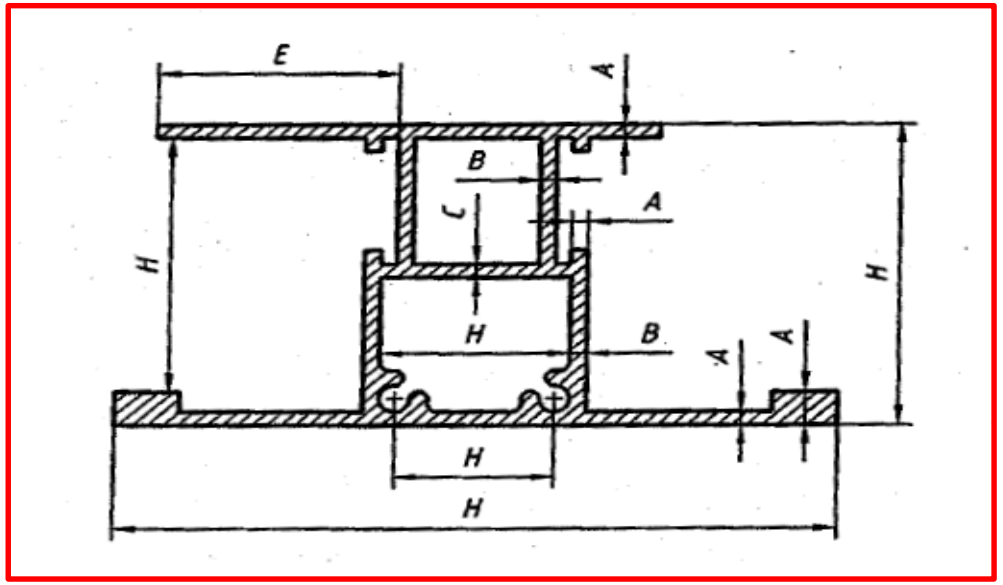
- Brinnel hardness shall be measured for the specimen thickness 5mm & for Webster hardness measurement the specimen thickness shall be 5mm

- The mechanical properties for temper grade T4 are the values obtained after a month's natural aging (at approximately 20C Degree) and are given for informative reference.

Standards

Cross-sectional dimensions:

- A: wall thickness except those enclosing the hollow spaces in hollow profiles;
- B: wall thickness enclosing the hollow spaces in hollow profiles, except those between two hollow spaces;
- C: wall thickness between two hollow spaces in hollow profiles;
- E: the length of the shorter leg of profiles with open ends;
- H: all dimensions (except wall thickness) between points on the cross section of the profile or the centers of open screw holes, including open ends.



Tolerance

Tolerances on cross-sectional dimension

* a. Tolerance for values of dimension E over than 120mm shall be subjected to agreement between supplier and purchaser.
** b. shall be subject to agreement between purchaser and supplier .

Tolerance on cross-sectional dimensions					
Dimension H		Tolerance on H (except open ends)	Tolerance on H (open ends)		
Over	Up to and including		E≤60		60<E≤120a
-	10	±0.15	±0.15		b
10	15	±0.20	±0.20		b
15	30	±0.25	±0.25		b
30	45	±0.30	±0.30		±0.45
45	60	±0.40	±0.40		±0.55
60	90	±0.45	±0.45		±0.65
90	120	±0.60	±0.60		±0.80
120	150	±0.80	±0.80		±1.0
150	180	±1.00	±1.00		±1.3
180	240	±1.2	±1.2		±1.5
240	300	±1.5	±1.5		±1.8
300	350	±1.8	±1.8		±2.1

Tolerance

Tolerance on wall thickness of solid and hollow profiles

* (Dimensions in millimeters)
* a. Shall be subject to agreement between purchaser and supplier

Tolerance on wall thickness of solid and hollow profiles					
Nominal wall thickness A, B or C		Tolerances on:			
		Wall thickness A		Wall thickness B and C	
Over	Up to and including	Circumscribing circle CD≤100	Circumscribing circle 100< CD≤350	Circumscribing circle CD≤100	Circumscribing circle 100< CD≤300
-	2	±0.15	±0.20	±0.20	±0.30
2	3	±0.15	±0.25	±0.25	±0.40
3	6	±0.20	±0.30	±0.40	±0.60
6	10	±0.25	±0.35	±0.60	±0.80
10	15	±0.30	±0.40	±0.80	±1.0
15	20	±0.35	±0.45	±1.2	±1.5
20	30	±0.40	±0.50	a	a
30	40	±0.45	±0.60	a	a

Tolerance

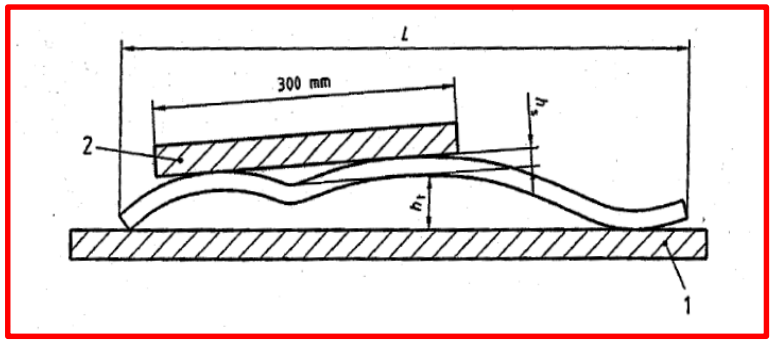
Tolerance on fixed length

Tolerance on fixed length					
Circumscribing circle CCD		Tolerance on fixed length L			
Over	Up to and including	L≤2000	2000<L≤5000	5000<L≤10000	L>10000
-	100	(+)5	(+)7	(+)10	Subject to agreement between supplier and purchaser
		(-)0	(-)0	(-)0	
100	200	(+)7	(+)9	(+)12	
		(-)0	(-)0	(-)0	
200	350	(+)8	(+)11	(+)14	
		(-)0	(-)0	(-)0	

Tolerance

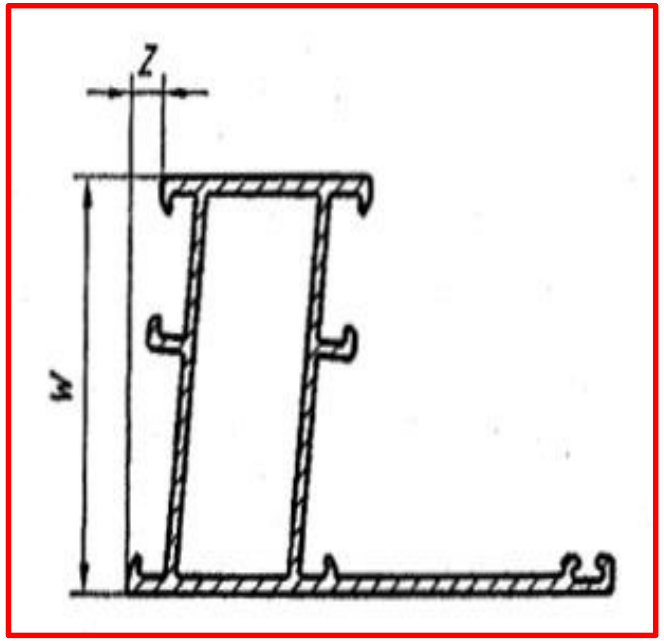
Straightness Tolerance

Straightness tolerance						
Straightness tolerance h for specified length L						
L ≤ 1000	1000 < L ≤ 2000	2000 < L ≤ 3000	3000 < L ≤ 4000	4000 < L ≤ 5000	5000 < L ≤ 6000	L > 6000
0.7	1.3	1.8	2.2	2.6	3.0	3.5



Tolerance for Right Angles

Tolerances for right angles		
Width W		Maximum allowable deviation Z from a right angle
Over	Up to and including	
-	30	0.30
30	50	0.40
50	80	0.50
80	100	0.60
100	120	0.70
120	140	0.80
140	160	0.90
160	180	1.0
180	200	1.2
200	250	1.5



Extrusion dimensions tolerance standards

BS EN 12020-2:2008

Aluminium and aluminium alloys. Extruded precision profiles in alloys EN AW-6060 and EN AW-6063. Tolerances on dimensions and form .

BS EN 12020-2:2008 Aluminium and aluminium alloys. Extruded precision profiles in alloys EN AW-6060 and EN AW-6063. Tolerances on dimensions and form

BS EN 12020-2 is the European standard that specifies tolerances on dimensions and form of extruded precision profiles, in alloys EN AW-6060 and EN AW-6063 manufactured with and without a thermal barrier. It applies to extruded products supplied without further surface treatment. Precision profiles covered in this standard are distinguished from extruded profiles for general applications covered in **BS EN 755-9** by the following characteristics:

- They are mainly for architectural applications
- They meet more stringent requirements regarding the surface condition of visible surfaces
- The maximum diameter of the circumscribing circle CD is 350 mm
- They are made to closer tolerances on dimensions and form.

Powder Coating Standards

BS 6496

BS EN 12206

The Standards for powder coating is adopted with BS standards. The scope of the standards includes the procedure for pretreatment of aluminium and aluminium alloy extruded bars. It also includes the procedure for the electro static powder coating on aluminium profiles and procedure for curing the coated profiles.

Our Verified Suppliers

Dubai Aluminium (DUBAL)	**Aluminium Billets/Logs**
Jotun Powder Coating	Powder
Integrated Gas	Supplies LPG Gas
Eroga – UK	Dies & Tools
Service Aluminium – UK	Dies & Tools
Alutool – UK	Dies & Tools
Compess – Italy	Dies & Tools
Cutlass - UK	Dies & Tools

SurTec Middle East LLC	**Chemicals**
Falcon Chemicals LLC	Chemicals
German Gulf	Chemicals
Petrotek	Chemicals
Al- Rama International	Chemicals
Presezzi Extrusion SPA	Chemicals
Interplast Co. Ltd.	Packing Material
Techno Seal - KSA	EPDM Gasket

FUTURE

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