

## GENERAL METAL SPECIFICATIONS

### STAINLESS STEEL:

Where stainless steel is specified it shall be what is known to the trade as Austenitic 18-B type 304, 2B finish, with content from 17% to 19% chrome, 7 % to 9% nickel and a maximum carbon content of 0.11. **A certificate with the batch number is to made available from the supplier and a copy to be made available upon request**

Stainless steel shall be free from scale and surfaces should be polished to a no.4 commercial finish.

### STAINLESS STEEL PIPE AND TUBING:

Seamless tubing shall be thoroughly and properly ground smooth and finished to match adjacent work. All tubing where exposed to view shall be given a final grand of not less then 180 grit emery.

### STRUCTURAL STEEL SHAPES:

All angles, band, channels or other structural shapes used for framing shall be of domestic manufacture uniform and ductile in quality, free of hard spots, runs, checks or cracks or other surface defects.

### HANDLES, BRACKETS, LOCKING DEVICES AND HARD WARE:

Wherever equipments are provided with handles, knobs, hinges, brackets or other misc. hardware all shall be either of heavy stain finish chrome plated brass or stainless steel.

All drawers, enclosed cabinets, refrigerators storage bins, shall be furnished with extra heavy duty security type locking devices of cylinder type, chrome plated.

### FASTENINGS:

Welds, bolts screws, nuts and washers shall be of stainless steel, except where brass or stainless steel is fastened, in which case they shall be of brass or stainless steel respectively. Where dis-similar metals are fastened, bolts, screws and nuts shall be of the highest grade metal. The spacing and extent of welds, bolts and screws shall be such as to ensure suitable fastenings and prevent bulging of the material fastened.

### WELDING:

All welding shall be done by the electrical fusion, metal –arc method. **Carbon-arc or gas welding will not be permitted.** All welding shall be done in a thorough manner, with welding rod of some composition as sheets or parts welded. Welds shall be complete welds, strong and ductile, with excess metal ground off joints finished smooth to match adjoining sheet Surfaces. All joints in top of fixtures, tables, drain boards; exposed shelving, sinks etc. shall be welded. All equipment here in specified which is constructed in more then one piece of sheet of metal, shall be continuously welded together with welds ground smooth and

polished. But welds made by spot welding straps under beams and filling in the voids with solder **and finished by grinding will not be accepted.**

It is the intention of this specification that all welded joints shall be homogenous with the sheet metal itself. Where sheet sizes necessitate a joint, such a joint shall be welded. Tops of fixtures shall be fabricated in the factory with welded joints to reduce field joints to a minimum, where fixtures joins the tops of such fixtures shall be continuous with welded joints except in the case of field joints. A joints made in the field shall be closely butted, pulled together in the field, field welded and polished smooth in accordance with section. Grinding, polishing finishing if these requirements. Tops of fixtures shall be of maximum length and with welded factory joints to an absolute minimum. Wherever welds occur on the surfaces not finished by grinding & polishing, such welds sand the accompanying discoloration shall be suitably coated in the factory by means of metallic base paint. To prevent the possibility of progressive corrosion of such joints.

#### **GRINDING, POLISHING, FINISHING:**

All welded exposed joints shall be suitably ground flush with adjoining material and neatly finish harmonizing herewith. Wherever material has been sunken or depressed by the welding operation, such depression will be suitably hammered and pressed flush to adjoining surfaces and if necessary again ground to eliminate low spots. All ground surfaces shall then be polished or buffed to match adjoining surfaces, consistent with good workmanship. Care shall be exercised in all grinding operations to avoid excessive heating of metal & metal discoloration. In all cases, grain of rough grinding shall be removed by successive polishing operations. Texture of final polishing operation shall be uniform and smooth consistent with reasonable care and good workmanship. General finish of all equipment shall be of high grade.

But joints and contact joints, wherever they occur, shall be close fitting and shall not require solder as filler. In no case in any Soldering for strength and stability of joint and fixture itself. Wherever breaks bend occur, it shall be free from undue extrude and shall not be flaky scaly or cracked in appearance and where such break work does mar the uniform surface appearance of the material. All such marks shall be removed by suitably grinding, polishing and finishing. Wherever shared edges occur they shall be free from burrs, fins or irregular projections and shall be finished over such sheared edges. Where miters are bull nosed corners occur they shall be neatly finished with under edge of material neatly ground to a uniform condition and, in no case any over lapping materials shall be accepted.

**It is the intention of these specifications to cover equipment of quality finish consistent with high grade manufacturing practices.** All exposed surfaces shall be of no 4 finish expected trim, which is to be more highly polished satin finish. Where specified all doors cabinets, shelves, whether inside /outside of cabinets and wherever exposed are to be no. four 4 finish. This applies to inside finish of any cabinet having doors or otherwise an exposed surface shall be interpreted as meaning an inside surface exposed to view when a sliding or swinging door is opened. Underside of shelf need not to be 4 finishes but such finish shall be at least equal to 80- ground finish. Final no. 4 finishes being factory finish, not as furnished by mill. **Indication of die markings not blending with final finish will not be accepted.**

**BOLT CONSTRUCTION:**

It is the intention of this specification that all equipment on exposed surfaces and wherever bolts are used to fasten trim to paneling and body of warmers, cabinets, counters etc. and more particularly to fasten tops of counter, dish tables etc. to top of framing such bolts and screws occur on the inside of the fixtures and are either visible or might come in the contact of the hands or the wiping cloth, such bolts, screws shall be capped with a suitable lock washer and chrome plated, brass or bronze acorn nut. Where screw nuts are not visible or readily accessible, they may be capped with a standard lock washer & steel nut treated to prevent rusting & corroding. Wherever bolts and screws are welded to underside of trim or tops, the reverse side of weld shall be neatly finished uniform with the adjoining surface of trim or top, depressions at these points will not be acceptable.

**SOUND DEADENING:**

Underside of all stainless steel top for tables, counters, sink dishes and pot table with angle framework shall be treated with a coating of Carbonize aluminum finish or approved alternate by The **Engineer-in-charge IIT-B**,

**MATERIAL AND WORKMANSHIP:**

All material equipment etc. shall be new and of kind specified and shall be in undamaged condition when turned over to IIT-B. All workmanship shall be of best quality of crafts men skilled in their respective trades. Appliances shall be of rigid construction free from objectionable vibrations and quiet in operation. Manufacture's nameplate shall not appear on any of the fabricated equipment.

## GENERAL MANUFACTURING GUIDE LINE

### RESERVATIONS:

Various items are specified here in with the model no., brand or trade names or name of manufacturer, and it is the intent of this specification that the exact fixture so specified shall be furnished. This is not intended to restrict competition and consideration will be given to other brands that are equal or superior on every respect, due written approval will have to be obtained from the **IITB/Kitchen Consultant(Kitchen Krafts)** prior to its submission. However no substitutes or alternatives will be accepted at a later stage, if not mentioned in the base bid.

IIT-B reserve right to waive any information or reject any or all bids or any part or parts thereof, or to accept that bid as a whole or part, which in his judgment.

The decision as to acceptance or rejection of any alternate proposed shall be that of IIT-B and / or architect or his consultant and their decision shall be final.

### LEGS:

All legs to be constructed of not less than 38 mm dia / 30x30 square stainless steel pipes( as specified and indicated in individual equipment illustration), cold drawn, annealed and pickled spaced not more than 1800mm C.C., all legs shall be uniform in finish. **All legs, to be of 304 SS.**

### LEGS CROSS BRACING:

All legs bracing where required, to be constructed of not less than 25 mm diameter / 25x25 mm square, 18GA SS pipes and as specified above for exact as noted below. All cross bracing to run horizontal between all legs, approximately 150 mm above floor unless otherwise specified. All joints to be completely welded around entire perimeter forming complete seal with all welds ground and painted. Where one side of box unit is eliminated to provide space for cans, carts, plumbing or otherwise single cross brace to extent to given legs, such cross brace to be reinforced by diagonal section of tubing and set not less then 150mm out at each side, all welded as specified herein before.

### UNDER BRACING:

All stainless steel counters, tables boards and dish tables tops to be braced below with stainless steel angle framework made of 35x35x3mm/5mm thick (or as specified in individual equipment illustration), spaced not more than 750 mm on centers and installed in similar fashion.

### FEET:

All legs shall be provided with adjustable nylon bullet feet, having an integrally formed shaft, with a minimum adjustment of approx. 40mm without using of threading or adjusting bolts. Feet shall be completely sealed at bottom and shall be close fitting between legs support and foot.

### UNDERSHELVES:

Where flat under shelving is specified under shelves shall be constructed of 16 GA SS All shelving shall be turned down on all sides approx. 40mm and in 12mm in channel shape with resulting corners cut out to fit contour of leg. Shelving shall be welded to legs and shall be ground polished & smooth under shelving shall

be reinforced with 35x35x3mm/5mm thick (or as specified in individual equipment illustration), 16GA SS welded angles. Removable type shelving to be of same material, rolled down on all sides with corners notched to counter of leg with resultant notches ground and polished smooth. Under shelving to be constructed in sections of not more than 900 mm and where butted against adjoining shelf section shelving to be turned down 40 mm and in 12 mm in channel shape. Supporting channel/framework to be furnished on underside of each self-section of same size and material as specified above.

#### **DRAWERS:**

Drawers inserts shall be constructed of 18 GA SS and shall have all corners curved to 20 mm radius.

Drawers front are to be not less than 16 GA SS double pan type with resulting corners welded ground and polished smooth. All drawers to be deadened. Drawers to set into an enclosed 18 GA SS vermin proof housing closed on all sides and bottom with **SS telescopic channel, auto stops and release catches**. Drawer's faces to be provided with recessed stainless steel handle.

**All drawers unless otherwise specified shall be 500 mm X 500mm X125mm deep, inside measurements.**

#### **SINKS AND DRAIN BOARDS:**

All sinks and drain boards to be constructed of 14 GA SS unless otherwise specified with all joints neatly welded, ground and polished smooth. No soldering at any point will be accepted in sink and drain board construction. All front and free standing edges to be turned up 40mm and to be turned out 50mm and down 40mm in 12mm raised fronts and ends of drain board are to be level with sink and continuous therewith and is not to follow pitch of drain boards. Drain boards to be pitched 3mm X 25 mm towards sink compartment. Sinks and drain boards to have 150/250mm high (as specified) splash back level and continuous not following pitch of drain boards adjacent to walls or adjoining equipment. Where drain boards exceed 600 mm in length legs shall be provided as here in before specified. All vertical and horizontal corners to be rounded to radius of approx. 25 mm with all intersections meeting in spherical section. All sinks having two or more compartments to have double dividing partitions, with fully rounded corners, both vertical & horizontal. All corners of drain boards to be rounded on insides to a radius of 25 mm front corners of rolled rim to be fully rounded on outside rolls and be concentric with inside of roll. Bottom of each sink compartment to be creased to sufficient pitch towards waste outlet with 100 mm 14 GA SS perforated removable strainer plate set not less than 3/8" below sink bottom. Opening for hot & cold water faucets to be cut in to top/splash back as required. All sinks shall be 300 mm deep unless otherwise specified to a no. 4 satin finish. Where sinks are to be built as a part of counters, overflow scrap compartments for sinks as indicated on plans, to be constructed same as above, welded into place, with resulting welds ground and polished smooth, eliminating traces of welding. Bottom of each sink compartment to be furnished with 50 mm IPS heavy-duty lever drain. Unless otherwise noted, connected overflow to be furnished with SS perforated plates secured to body of sinks and constructed so that constant water level is 25 mm below dividing partition.

#### **DISH TABLE:**

Dish table to be constructed to be same as previously specified for sink drain boards except as noted below. Where table enter dish washing machine or pot washing they shall be turned down 25 mm into machine and a flange provided at both front and splash back, arranged so as to permit a neoprene gasket, approx. 3mm thick, being bolted between flanges and turned down of table forming a watertight joint across bottom and if up both sides to top edge of dish table. Under side of all dish tables shall be provided with sound deadening material either sprayed or brushed on into smooth coating. Sound deadening to be Carbonize or equal and

finished sprayed with aluminum. **To be constructed in due consultation/co-ordination with Dish washer vendor/supplier.**

#### **STAINLESS STEEL TABLE TOPS:**

Where SS tops are called for they shall be of not less than 14 GA SS finished in satin finish with shall be turned down on all sides approx. 40mm and in 12mm in channel shape all resulting edges rounded with no burrs or other excess material left. Where tables are placed against building walls they are to be turned up in back approx. 150 mm and returned 25 mm 90 at wall with all exposed ends closed.

Vertical and horizontal joints to be coved on 20mm radius terminating in fully coved intersections thoroughly welded, ground and polished smooth to match top surfaces.

Top shall be constructed of single pieces of S.S and to be reinforced underneath with angles as noted above, space not more than 750 mm C.C. tables 1800 mm and longer to have 35 X 35 X 3mm/5mm thick stainless steel angle frame work reinforced outside edges with cross channels over 750 mm or less.

#### **SLIDING DOORS:**

Sliding doors where called for, to be made of 16 GA SS exterior and 18 GA stainless steel interior unless otherwise specified. Doors to be equipped with recessed stainless steel pull handles. Door to be made removable. Door to be double pan construction, filled with suitable sound deadener, 12 mm thick with all corners welded ground and polished smooth to uniform finish. Doors to be designed to permit removal for cleaning and adjustment without use of tools. Bolts and screws are to be kept to minimum and to be of corrosion resisting metal. Spacers where not exposed to view may be of 14 GA, 20 mm diameter upper suspension nylon rollers to be heavy duty and ground to minimize wear and noise. Precaution to be taken in all cases to avoid friction and rubbing between doors, door suspension and upper sliding framework including hardware.

#### **NOTE:**

Double doors to be provided with double overhead tracks and carriers for maximum clear door opening. Units to be provided with trackless bottom with concealed guide for overhead roller doors. Guides to be equipped with limit stops and to prevent telescoping of doors.

#### **HINGED DOORS:**

Hinged doors for cabinets, counter etc. to be constructed of 16 GA SS with ground and polished smooth. Hinges catches and locking devices to be chrome plated brass. Hinges to be of construction as to eliminate exposed bolts and screw heads. Doors handles to be provided and to be SS as here in after specified.

#### **COUNTER, CABINET AND OVERHEAD SHELVES:**

Counter shelves and cabinet shelves to be constructed of 16 GA SS. Overhead cabinets shelves to be constructed of 16 GA SS. All shelving is to be removable type, finished in satin finish and constructed in sections of not more than 750 mm. where shelves are more than 1500mm above floor, underside of shelf to be finished same as top. All shelves to be removable for easy cleaning. Plate warmer shelves to be perforated and removable.

#### **UNTENSIL RACK:**

Units to be measured approx. 600mm wide X length as shown on plan, constructed of 50mm X 6mm SS bond with ends fully rounded, one piece welded construction, ground and polished smooth to uniform finish. Center rails to be located approx. 250 mm below outer rails and secured by means of welded V shape braces constructed of same material. Potheooks to be sliding type, positioned 150 mm CC for both upper and lower rails.

Units to be hung from ceiling slab by means of 50 mm X 6mm SS band hangers with cross bracing to prevent swaying. Supports to be secured to racks by means of SS round heads, bolts and acorn nuts with lock washers. Top of ceiling hangers when not exposed to be secured to a 12 S.S. channel, which shall be anchored to ceiling slab in an approved manner. If supporting channels are exposed they are to be constructed of 12 GA SS secured to finish ceiling in approved manner.

Revolving utensil racks to be as here in after specified and in accordance with details shown on drawings.