

# KAUSTAV ENGINEERING

Mechanical Equipments Solutions

## ABOUT US

M/s **KAUSTAV ENGINEERING** is a Leading mechanical engineering firm specializing in providing a wide range of engineering services and supply solutions. With a commitment to excellence, innovation, and customer satisfaction, we have established ourselves as a trusted partner in the engineering industry. Our expertise encompasses various domains within mechanical engineering, and we leverage cutting-edge technologies to deliver superior results to our clients.

## OUR MISSION

Our mission is to provide innovative, cost-effective, and sustainable engineering solutions and supply services through the utilization of advanced technologies, best practices, and a dedicated team of professionals. We aim to contribute to the growth and success of our clients, while promoting environmentally friendly practices in the engineering sector.

## CORE SERVICES

- **Engineering Design and Consulting**
- **Equipment Supply**
- **Project Management**
- **Maintenance and Repairs**
- **Energy Efficiency and Sustainability**
- **Supply Through-GeM & CPP**

## OUR SERVICES

- **Mechanical Equipment's Basic and Detail Engineering**
- **Reverse Engineering**
- **3D Modelling, Simulation & FEA**
- **New Product Development**
- **Standardization of the Products**
- **Layout design**
- **Refurbishment Jobs**
- **Sheet Metals and Switch Gear Panels(CNC Punching, Bending & Nesting)**
- **2D to 3D conversion (Any Format)**
- **Design & 2D drawing Preparation.**
- **Brush Up training NX, SolidEdge, SolidWorks, AutoCad Mechanical, ZW CAD application with Live project Experience**



## ENGINEERING ,3D MODELLING AND DRAWINGS

### 4 Welded joints and loads/ stresses - Basics

Stress basics

- Stress flow:
- Stress distribution:
- Simple way to improve weld → Machinegrind the surface:

### General Stress Analysis

Main equation

$$\frac{\sigma_{max}}{F.o.S.} \cdot v = \sigma_{allow} \geq \sigma_{comb}$$

$\sigma_{max}$  ...max. allowable stress (table 11, from DIN 15018)  
 FoS ...Factor of Safety  
 v ... Factor for welding quality  
 $\sigma_{allow}$  ...max. allowable stress  
 $\sigma_{comb}$  ... combined stress

### General Stress Analysis

Factor of safety add, given max. stress

The factor of safety is individually defined by the kind of application.

- Ground Equipment with defined load**
  - not safety critical (-no danger for persons if weld fails)
  - max. possible load is known and so further load possible (e.g. Cranes, brackets)**FoS = 1.25**
- General Ground Equipment**
  - not safety critical (-no danger for persons if weld fails)
  - max. possible load is known but further loads are possible but not likely (e.g. General stacks, support frames)**FoS = 1.50**
- Manipulating Equipment**
  - not safety critical but failure would cause massive damage to operation
  - max. possible load is known but further loads are possible but not likely (e.g. technological equipment, lifting equipment but not overhead)**FoS = 1.75**
- LIFTING Equipment**
  - safety critical
  - max. possible load is known (e.g. beam suspension, lifting tips of overhead transport equipment, liquid steel equipment)**FoS ≥ 2.00**

All are only applicable for the General Stress Analysis but NOT for Fatigue Analysis acc. DIN 15018

### General Stress Analysis

Combined stress

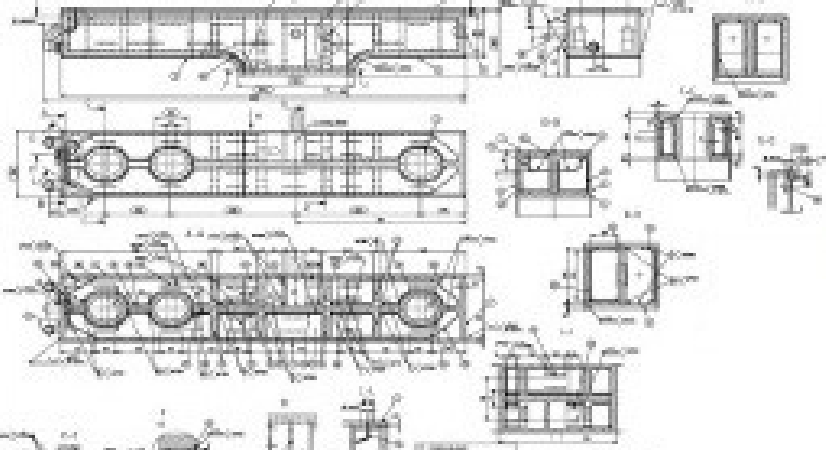
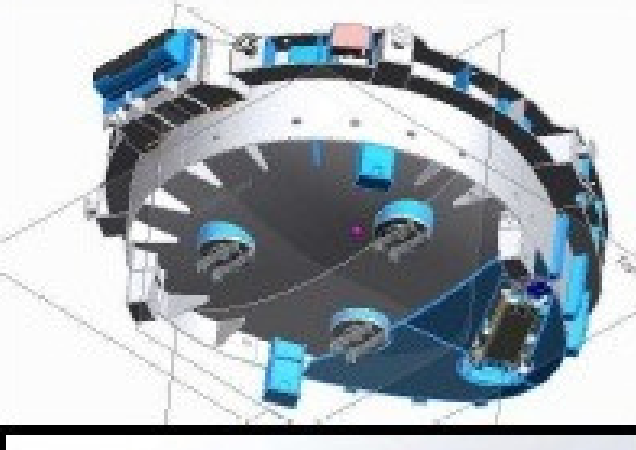
The combination of several stresses in one joint shall always be considered

$$\sigma_{comb} = \sqrt{\sigma_b^2 + 3 \cdot \tau^2}$$

$$\sigma_{comb} = \sqrt{\sigma_b^2 + \sigma_{tc}^2 + 3 \cdot \tau^2}$$

$\sigma_b$  ... bending stress  
 $\tau$  ... shear stress  
 $\sigma_{tc}$  ... tensile stress  
 $\sigma_c$  ... compressive stress

Depending on the type of stresses which are in the joint, the applicable formula shall be used.

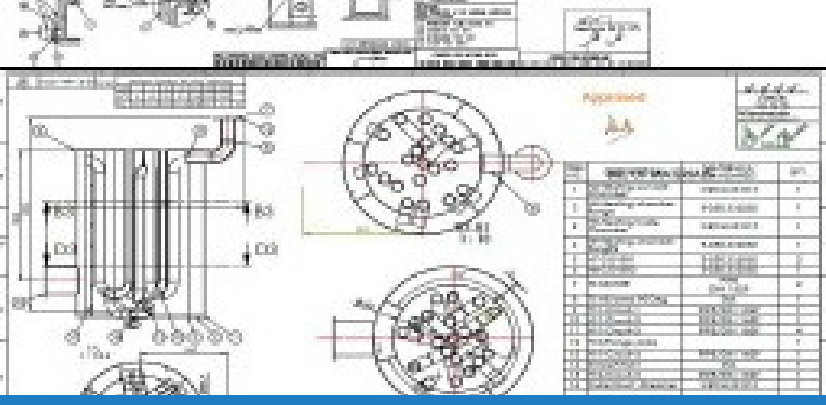


### General Stress Analysis

Shear stress in longitudinal welding seams in beams

$$\tau = \frac{F \cdot A_1 \cdot y_1}{I \cdot \sum a}$$

$\tau$  ... shear in longitudinal welds in a beam  
 F ... force  
 $A_1$  ... Area(s) above the discussed weld  
 $y_1$  ... Distance from Axis to centre of  $A_1$   
 I ... Moment of Inertia of whole beam  
 $\sum a$  ... sum of all welding sizes at the discussed area

$$\tau_b = \frac{F \cdot (A_1 \cdot y_1 + A_2 \cdot y_2)}{I \cdot \sum a}$$


## ENGINEERING PRODUCTS





## WHY WE?

- We do everything in Standards and following all the conventions required in the field of Manufacturing, Engineering, understanding and presentations.
- Qualified and Experienced Professional Team
- Cost Efficiency
- Accuracy and Innovation
- On-Time Delivery
- Application High End Engineering Tools
- Use of High end Engineering Tools like -NX, PDS, SOLID EDGE, SOLID WORKS, AUTOCAD MECHANICAL etc

## QUALITY

M/s Kaustav **Engineering** is an innovative Engineering & Manufacturing company associated with Engineering, Design & Manufacturing of construction Machineries.

### *Commitment*

The organization is committed to work persistently to meet or exceed the customer's requirements. We are also committed for the continual improvement of the system.

### *Objectives*

Our objectives are to maintain the highest level of customer satisfaction through continuous improvement of processes and to continually strive at keeping work related injuries to a minimum. These objectives are achieved through teamwork and as per the standard procedures which provide the framework for the realization of our quality process.

### *Responsibility*

The Management of Kaustav **Engineering** accepts full responsibility for allocating the necessary resources in training, initiatives and technology required to maintain this Quality System.

This Quality Policy shall be posted, understood and implemented at all levels of the organization.



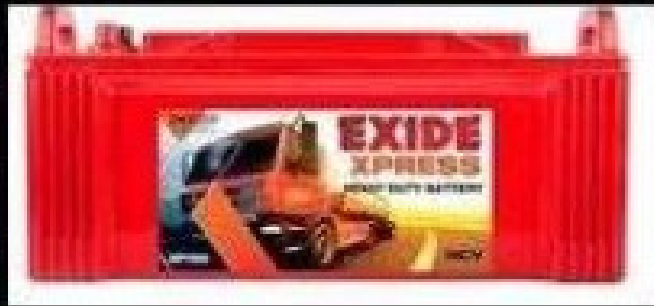




# SERVICE AND SUPPLY

## RESERACH & SCIENTIFIC INSTRUMENTS

### BATTERIES



### HOT AIR OVEN



### HOMOGENIZER



### PCR MACHINE



### TUBE ROTATOR



### COBUSTIBLE GAS DETECTOR



### LABORATORY INCUBATOR



### ULTRA LOW TEMPERATURE DEEP FREEZER



### AUTOCLAVE



### ROTARY EVAPORATOR



### LABORATORY BOD INCUBATOR



### HUMIDITY CHAMBER



### BIO SAFETY CABINET



### CARBON DIOXIDE INCUBATOR



### PH METER



## SOLAR, LAB FURNITURE, MEDICAL OT BEDS, MONITORS & FURNITURE





# SERVICE AND SUPPLY

# KAUSTAV ENGINEERING STORAGE SYSTEMS

**MEZZANINE FLOORS**



**Catwalk Storage System**



**Slotted Angle Mezzanine Floor**



**SLOTTED ANGLE RACK**



**SLOTTED ANGLE RACK**



## Wire Mesh Trolley



## Goods Trolley





# SERVICE AND SUPPLY

# KAUSTAV ENGINEERING STORAGE SYSTEMS

## CABLE TRAY



## Movable Rack



## Two-Tier Rack



## Bend Tee Reducer





# SERVICE AND SUPPLY

# KAUSTAV ENGINEERING STORAGE SYSTEMS

## MULTI TIER RACK



## Cantilever Type Rack



## PALLETS RACK



## PALLETS PLATE



## MOBILE RACK



Hand Pallet Truck



Plastic Drawer



Plastic Bins



Bins



Plastic Crate



Dogleg Stair



Bookshelf



# ACTIVITIES

ALL GEARED MILLING & DRILLING

METAL SHELVES RACK





# ACTIVITIES

## ACTIVITIES & TRAINING



### STATIONARIES, ELECTRICALS & HOUSE KEEPING

STATIONARIES	
1	Binder Clip of Size 32mm
2	Binder Clip of Size 41mm
3	Binder clip of size 19mm
4	Binder clip of size 25mm
5	Binder clip of size 15mm
6	Binder clip of size 51mm
7	Correction white fluid pen
8	Glue Stick of 15 gms
9	White board marker pens set of 4 colours
10	Permanent marker pens set of 4 colours
11	White board duster, magnetic.
12	Tape dispenser
13	Coloured paper clip
14	Cutter knife
15	Self adhesive note sheet, 2inx3in
16	Self adhesive note sheet, 3inx3in
17	Self adhesive note sheet, 3inX5in
18	Punch machine of Big size
19	Punch Machine DP-600 or equiv.
20	Stapler machine, small size, no 10
23	Stapler Pin, size 10, 20x50
24	stapler pin no. 24/6
25	Transparent adhesive tape of size 24 mm
26	Transparent adhesive tape of size 48 mm
27	Printing paper, size A4, 75 GSM
28	Printing paper, size A3, 75 GSM
29	Fullscap paper
30	Flat File with spring holder
31	Poly cotted Envelope of size 17inx14in
32	Box File with spring holder
33	Plastic Folder, both side transparent A4
34	Poly cotted Envelope of size 14inX12in
35	Medium economic range writing ball pen b
36	Higher economic range ball pen red
37	Higher economic range ball pen green
38	Higher economic range ball pen black
39	Standard Calculator
40	Register-No.6
43	Register-No.12
44	Dak despatch Register No. 30
45	Dak Receipt Register No. 30
46	Plain Envelope 11inX4.5in
47	Plastic Scale
48	Scissor(17.5 cm)
49	Rubber band of size-10
50	Cover file
51	Brown Tape 2in
52	Note Pad No. 40
53	Notepad (14.0 cm x 22.0 cm)
54	Slip pad small size (14.0 cm x 22.0 cm)
55	spiral note book ( 14.8 c.m. X 21.0 c.m)
56	Spiral note book ( 17.6 c.m. X 25.0 c.m.
57	Spiral Pocket note book
58	Uniball pen
59	Gel Pen
60	hi-tech point pen
61	Page marker
62	Book marker
65	Adhesive Tape 1in
66	Eraser
67	All out machine
68	All out refill
69	Good Night (Mousquitto repellent)
70	
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77	

ELECTRICALS	
1	PVC SWITCH BOARD 10 X 8
2	18 WATT LED TUBE FITTING
3	9 WATT LED BLUB
4	ALUMINIUM BTC WIRE - 10 SQ MM
5	40 AMP SP MCB 10 KA (BB10400C)
6	16 AMP SP MCB 10 KA (BB10160C)6-16 Amp
7	15 AMP S.S. COMBIND WITH BOX
8	6 AMP S.S. COMBIND WITH BOX
9	15 WATT LED BULB
10	BULKHEAD FITTING LED 10 Wt / HAV
11	16 AMP SP MCB 10 KA (BB10160C)
12	6 AMP SWITCH
13	ALUMINIUM BTC WIRE - 6 SQ MM
14	PENDENT HOLDER
15	10 WATT LED TUBE FITTING
16	32 AMP SP MCB 10 KA (BB10320)
17	HAV DB 6WAY SPN S/D
18	16 AMP SWITCH
19	ANC SWITCH 6A (38014 / 50010 )
20	16 AMP SOCKET
23	16 AMP SOCKET
24	ALUMINIUM BTC WIRE - 2.5 SQ MM
25	25 MM CASSING CAPPING
26	PHILIPS 12W LED EMERGENCY BULB
27	CROMPTON LSDRMN SLIM FLAT 12W LED PANNEL LIGHT
28	CROMPTON 15W COLOUR LED ROUND PANEL
29	DURAVOLT DLITE POLYCARBONATE BATTEN HOLDER
30	POLY CAB ETIRA /FINOLEX CU MULTISTRAND WIRE1.0SQMM FR 90
31	6 AMP ANCHOR PENTA SWITCH( Modular)
32	HAVELLS 20W TUBE LIGHTS
33	AA Cell
34	AAA Cell
35	All types of ables

HOUSE KEEPING	
1	Harpic ( 1 Ltrs.)
2	Detol Hand wash
3	Phenyl 5 Ltrs Jar (white)
4	Phenyl 5 Ltrs Jar (Black)
5	Black Hit
6	Tissue paper
7	Detol 500 ½ Ltrs(Hand wash Liquid)
8	Garbage Bag ( Big)
9	Garbage Bag ( Small)
10	Room freshener (Air)
11	Odonil
12	Chittrolla( Floor cleaner)
13	naphthaline ballls kg
14	Harpic 500ml
15	odonil
16	Handwash 5L
17	Napkin Paper
18	Colin
19	Napkin Multifold
20	Toilet Brush
23	Shampoo
24	Toothpick
25	Room Freshner
26	Lizol
27	Surf Excel
28	Wiper
29	Broom
30	Hand Sanitizer 5 ltr
31	Register 336 page
32	scrubber
33	Register 336 page
34	scrubber
35	scrubber
36	
37	
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39	
40	





# PRODUCTS AND SUPPLY

## MECHANICAL COMPONENTS

MECHANICALS	
PIPE	BEARING
SEAMLES FITTINGS	SKF
ERW PIPE FITTINGS	FAG
BUTTWELD FITTINGS	NBC
FLANGE FORGED FITTINGS	TATA BEARING
MARK ii DEEPWEL	HMT
HAND PUMP & FITTINGS	NACHI
C.I PIPE & FITTINGS	ZKL
C.I SLUICES VALVE	FBJ
REFLUX VALVE	TIMKEN
G.M VALVE	ADL
AIR STEAMER BOILER	MSGILL
	NTN
<b>SAFETY PRODUCTS</b>	KAYO
	NSK
<b>STAINLESS SHEETS,PLATES</b>	HCH
	IKO
<b>STAINLESS PIPE &amp; FITTINGS</b>	
	<b>PULLEY &amp; COUPLING</b>
<b>SOLUTIONS FOR INDUSTRIALS NEEDS</b>	
BOSCH	
POLYMAK	
SUMAKE	
KAYMO	
DREMEL	
HILTI	
MITUTOYA	
YATO	
STIHL	
STANLEY	
FISCHER	
PILOT	



MECHANICALS
SPRINGS
COMPRESSION SPRING
COUPLING SPRINGS
VOLEUIDE SPRING
CIRCLIP
DOLPHIN SPRINH
SPRING WASHER
<b>FASTENERS</b>
HIGH TENSILE FASTENERS
ANCHOR FASTENERS
MS BOLY & NUT
SS BOLT & NUT
G.I BOL & TNUTS
<b>HYDRAULICS &amp; PNEUMETRIC</b>
PNEUMETRIC & SOLENOIDS VALVES
PUSH FITTINGS
PU TUBES
HYDRAULIC FITTINGS
FLUIDS CONTROL VALVES
CLAMPS
COUPLINGS
HIGH PRESSURE HYDRAULIC HOSES & FITTINGS
<b>WIRE ROPES</b>
ELECTRIC & HAND WINCH
HOT/EOT CRANE
HYDRAULIC PALLET TRUCK & HAND TOLLY
TURN BUCKLE & D-SHACKLE

MACHINES
POWER TOOLS
WELDING MACHINES
HYDRO TEST PUMP
HYDRAULIC JACK
PIPE BENDER
CHAIN PULLEYS
HAND TOOLS
<b>PROCESS MILLS</b>
MURF RCASTER
GRINDER
RICE MILL
PULVERIZER
CHIKEN MACHINE
SS PULVERIZER
CLEANER & RICE GRADER
PALARHIGAR
HAMMER PALARHIGAR
CENTRIFUGAL CHALNA
DAL MACHINE
EMARY STONE



## SPECIAL COMPONENTS

<p><b>SAFETY CONE/ROAD BARRIED</b></p>	<p><b>CEALING PANEL LIGHTS</b></p>	<p><b>PLANT GROWTH CHAMBER</b></p>	<p><b>HIGH PRESSURE WASHER</b></p>	
		<p><b>AUTOMATIC WEATHER CHAMBER</b></p>		

We are easily available at Guwahati, Assam and Entire Nort East  
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# CLIENTELE



INDIAN EXPLOSIVE LIMITED, JHARKHAND



NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA



ICAR-CIFRI, KOLKATA



SPORTS AUTHORITY OF INDIA



JBFS, KOLKATA



BRAHMAPUTRA CRACKER AND POLYMER LIMITED



GREENVIROMENTAL GLOBAL, KOLKATA



GAUHATI UNIVERSITY



ASSAM AGRICULTURE UNIVERSITY, JORHAT



AIRPORTS AUTHORITY OF INDIA



MECON LIMITED, RANCHI, JHARKHAND



INSTITUTE FOR PLASMA RESEARCH



KAZIRANGAN UNIVERSITY, JORHAT



NORTH EAST DISTILLERIES PRIVATE LIMITED



INSTITUTE OF ADVANCED STUDIES OF SCIENCE AND TECHNOLOGY (IASST, GUWAHATI)



CENTRAL MUGA ERII RESEARCH RESEARCH AND TRAINING INSTITUTE



INDIA METROLOGICAL DEPARTMENT



ALL INDIA INSTITUE OF MEDICAL SCIENCE, GUWAHATI



TEZPUR UNIVERSITY, TEZPUR



TEA BOARD OF INDIA, GUWAHATI



IIT, GUWAHATI, ASSAM



JORHAT ENGINEERING COLLEGE, JORHAT



NUMALIGARH REFINEARY LIMITED, GUWAHATI



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