



An ISO 9001 - 2008
Organization



ISO/IEC-17025:2005 NABL ACCREDITED FOR NDT
(Dept. of Science and Technology, Government of India)



PIPE STRESS ANALYSIS

INTRODUCTION:

- Objectives & Definition
- Information Required
- PIPING Loads - Static & Dynamic
- Classification of Loads
- Solutions for PIPING Loads
- Static & Dynamic Analysis
- Forces, Moments & Stress Calculations
- Requirements of ASME B 31.3

DESIGN AND PIPE SPAN CALCULATIONS

- Span limitations based on Stress, Deflection & Natural Frequency
- Selection of Supports
- Location of Supports and Restraints
- Allowable Pipe Span Calculations
- Suggested Pipe Support Spacing
- Pipe Span Reduction factor for Elbows, Concentrated Loads etc

ASME B 31.3 CODE EQUATIONS

- Thermal Expansion Stress - Se and Code
- Stress Range Reduction Factors - F
- Bending & Torsional Stress
- Formal Analysis Requirements
- Inplane & Outplane Bending Moments
- Stress Identification Factors - SIF
- Calculation of Thermal Expansion
- Cold Spring for pipe Stress Analysis

DETAILING:

SUSTAINED LOADS - INTERNAL PRESSURE & LONGITUDINAL STRESSES

- Theories of Failure for pipe Stress Analysis
- Stresses acting in Pipe due to internal Pressure
- Sustained Loads Qualification
- Analyzing Vibrating Pipe for pipe Stress Analysis

SOFTWARE'S

- Introduction
- Nozzle Thermal Growth Calculations - pumps, vessels, heat exchangers
- Modeling of PIPING elements & isometrics - Bends, Reducers, Valves, Loops
- Performing Static Analysis
- Modifying Load Cases
- Hanger Selection
- Set up of Wind Load Cases
- Set up of SUS, OPE, EXP, HYD, HGR, & OCC loads
- Load Case Editor
- Viewing Reports
- Equipment Nozzle Load Qualifications
- Coding technique of Vessel PIPING includes both PIPING and vessel coding in Caesar II
- Local vessel flexibilities
- Evaluation of local vessel stresses
- Practical Examples - Input, Analysis & Redesign

CHENNAI

No. 5, Boopathy Street, Virugambakkam,
NEAR - NATIONAL INOX MOVIE THEATRE
Virugambakkam Bus Stop and Mosque Opposite,
Chennai - 600 092.
Tel: 044-42047244, 044-42077677, 044- 43072173
Mobile : 093810 48884, 093810 77677, 093845 77677
Email Id :twggrouppchennai@gmail.com



093810 77677
073580 27788
093810 48884

BANGALORE

No.54, 15th Main Road, 2nd Floor,
East of Chord Road, Vijayanagar,
Opposite - Vijayanagar Metro Station,
Bangalore-560 040.
Karnataka, India.
Mobile : 073580 27788, 073497 13223, 093825 88890
Email :twggrouppbangalore@gmail.com

COIMBATORE

DHEEPAM COMPLEX
No 574 to 581, 3rd Floor,
100 Feet Road, Near G.P. Signal,
LANDMARK : KALYAN JEWELLERY
Gandhipuram,
Coimbatore - 641 012.
Mobile : 093810 77677, 093810 48884
Email id : twggrouppchennai@gmail.com

TRICHY

SRI GEM PLAZA
No. 3, 4th Floor,
Sankaran Pillai Street,
S.R.C College Road,
Chathiram Bus Stand,
Trichy-620 002.
Mobile : 093845 77677, 093825 88890
Email Id :twggrouppchennai@gmail.com

MUMBAI

"CRESCENT BUSINESS SQUARE" OfficeNo. 810
Kherani Road, Opposite - SJ STUDIOS
Sakinaka Metro Junction,
Andheri (East)
Mumbai - 400 059.
Mobile : 093810 48884, 073580 27788
093810 77677, 076679 78887
Email Id : twggrouppmumbai@gmail.com

KOCHI

"TWG GROUP KOCHI"
Near LULU Shopping Mall,
Edappally Toll Junction ,
Metro Bridge - Pillar No - 387
V.P Marakkar Building,
V.P Marakkar Road,
Via - Vanitha & Vinitha Theaters,
Edappally P.O, Kochi - 682 024.
Mobile : 093810 48884, 093810 77677, 093845 77677
Email Id :twggrouppchennai@gmail.com

VIZAG

No. 8 -12 -1/1, II Floor,
Gayathri Nilay, Gokul Nagar ,
Beside Varun Motors/Karur Vysya Bank Backside,
OLD GAJUWAKA JUNCTION ,
VISHAKAPATINAM - 530 026.
Andhra Pradesh, India.
Mobile : 093810 48884, 076679 78887, 073580 27788
Email Id : twggrouppchennai@gmail.com

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TRIVANDRUM | CALICUT | HYDERABAD | PONDICHERRY | MADURAI | NAGARCOIL | AMARAVATI

