

findTubeDiameter.m

```
function d = findTubeDiameter(t,dmax,P,Leff,E,Sy)
% findTubeDiameter diameter of round tube that does not buckle

opts = optimset('Display','off');
d = fzero(@pipeLoadDeltaDia,dmax*[0.5 1],opts,t,P,Leff,E,Sy);
```

fzero.m

```
function [b,fval,...] = fzero(FunFcnIn,x,options,varargin)
%FZERO Single-variable nonlinear zero finding.
```

(line 241)

```
try
    fa = FunFcn(a,varargin{:});
catch
```

pipeLoadDeltaDia.m

```
function dP = pipeLoadDeltaDia(d,t,P,Leff,E,Sy)
% pipeLoadDeltaDia Difference between applied and critical loads
...
dP = beamPcr(A,I,Leff,E,Sy) - P;
```

beamPcr.m

```
function Pcr = beamPcr(A,I,Leff,E,Sy)
% beamPcr Critical load for buckling of a beam

Pcr = ...
```