FACULTE ENVIRONNEMENT NATUREL, ARCHITECTURAL ET CONSTRUIT ENAC
INSTITUT D'INGÉNIERIE CIVILE IIC
Laboratoire des Structures Métalliques Résilientes RESSLab

Téléphone : +41 21 693 24 27
Fax : +41 21 693 28 68
E-mail : dimitrios.lignos@epfl.ch
Site web : http://resslab.epfl.ch
Address: EPFL ENAC IIC RESSLAB
GC B3 485, Station 18,
CH-1015, Lausanne

Exercise #13 –Plate Buckling -Part 2 – Post-buckling shear resistance of web panels

Consider an S355J2 steel open-section beam, with the distance between flange centerlines $h_f = 1500\,mm$, web thickness $t_w = 10\,mm$, and transverse stiffener spacing $a = 2000\,mm$. Compute the shear resistance of the web for the following cases:

1. With transverse stiffeners and anchoring of tension diagonal at the beam extremity;
2. Without transverse stiffeners, but with anchoring of tension diagonal at the beam extremity;
3. Without transverse stiffeners and without anchoring of tension diagonal at the beam extremity.