



TEAM DESIGN- 2<sup>nd</sup> floor Regal Court, 42-44 High Street, Slough, SL1 1EL  
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Project No	Example	Sht. No.	16 of 16
Site Address	Example		
Subject	Extension and alteration works – Supporting Calculations		
Engineer	Peter V	Date:	

- : Cleat thickness;  $t_{cleats} = 10 \text{ mm}; \text{PASS}$
- : Bolt gauge;  $g_{bolts} = 105 \text{ mm}; \text{PASS}$
- : Cleat Length;  $l_{cleats} = 140 \text{ mm}$
- : Cleat length for torsional requirements : **PASS;**
- : Cleats fit between beam fillets : **PASS**

**SUMMARY OF RESULTS**

**Check 2 - Capacity of bolt group connecting cleats to web of supported beam (taking account of eccentricity 'a')**

Shear utilisation factor;  $U_{check2shear} = 0.198;$  **PASS**

**Check 3 - Capacity of cleat connected to supported beam**

Shear utilisation factor;  $U_{check3shear} = 0.058;$  **PASS**

Bearing utilisation factor;  $U_{check3bearing} = 0.119;$  **PASS**

**Check 4a - Capacity of the supported beam**

Shear utilisation factor;  $U_{check4shear} = 0.197;$  **PASS**

Bearing utilisation factor;  $U_{check4bearing} = 0.660;$  **PASS**

**Check 5 - Capacity of bolt group connecting cleats to supporting beam**

Shear utilisation factor;  $U_{check5} = 0.102;$  **PASS**

**Check 6 - Capacity of cleats connected to supporting beam**

Shear utilisation factor;  $U_{check6shear} = 0.058;$  **PASS**

Bearing utilisation factor;  $U_{check6bearing} = 0.082;$  **PASS**

**Check 7 - Local capacity of column web**

Shear utilisation factor;  $U_{check7shear} = 0.053;$  **PASS**

Bearing utilisation factor;  $U_{check7bearing} = 0.113;$  **PASS**

EXAMPLE

Supporting Beam G- UC 203x203x46;;	$Grade_{supporting} = "S275"$
Supported Beam A- 2no UB 178x102x19;;	$Grade_{supported} = "S275"$
Cleats 2 x RSA 90x90x10;; (140mm cleat length)	$Grade_{cleats} = "S275"$
6no Bolts M16 (Grade 8.8)	

**NOTE:** For Building Regulations Submission only, not for ordering materials. Principal Contractor is responsible for taking measurements on site, preparing construction drawings and safely erecting the proposed structural works. Team Design is not responsible for site supervision.

**IF IN DOUBT - ASK!**