RAMBOLL

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Project KXB

LOAD AND CAPACITY FACTORS

Philosophy

S1061

Existing elements to the TfL demise are validated to TfL report S1061 A5.

Load combinations

cl. 3.3.4.2

QA = assessment load = γf x QK
QK = nominal load
γf = γf1*γf2*γf3

(b)

γf3 = 1.15, γf2 = 1.0

We note that by inspection, wind loading is not critical for the girders.

Table 13

Type	Beneficial	Adverse
DL	0.85	1.15
LL	0	1.35

→ γf1

← Chosen conservatively from table 14

γf = 1.32G + 1.55Q

Standard BS factors will instead be employed conservatively:

γf = 1.4G + 1.6Q

Assessment of Resistance

cl. 3.3.5.2

RA = assessment resistance = FCxRA*
RA* = calculated resistance
FC = condition factor

cl. 3.3.5.3

RA* = function (fk / γM)

table 15

Material	Steel	RC	Masonry	RC reinf.
γM	1.05	1.5	1.0	1.15

RA* = function (230 / 1.05) = function (219)

cl. 3.2.6.3

FC = 0.9 -> web and top flange uncertainty for girders
RA = function (219*0.9) = function (197).

cl. 3.3.10.2

Alternatively, grade 46 (s275) steel can be used for the calculation and the resulting capacities multiplied by 230/275. The FC factor will in these instances still be applied to the results --> utilisation <= 100%x230/275x0.9 = 75%