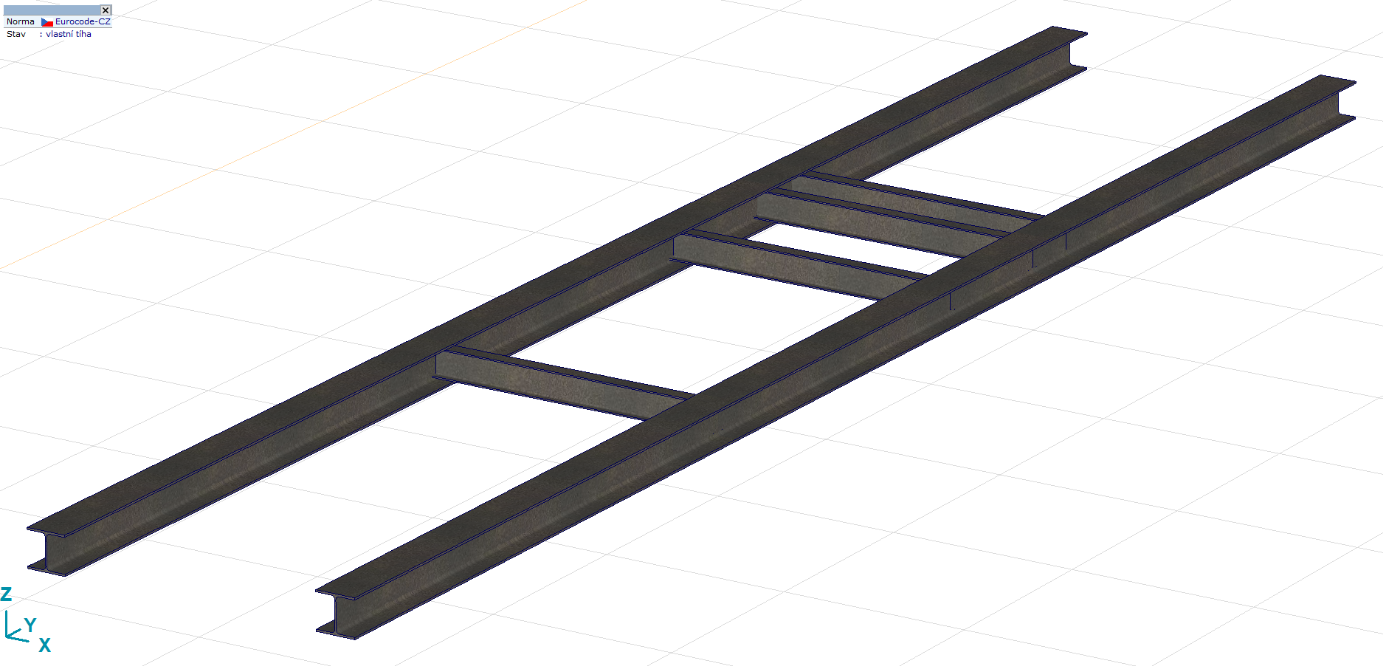
******

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***POSOUZENÍ VYBRANÝCH KONSTRUKCÍ***

*OCELOVÁ KONSTRUKCE VZDUCHOTECHNIKY NA STŘEŠE PŘÍSTAVBY*



Dokument Přehled

# Data modelu

### Materiály

|  | **Jméno** | **Typ** | | **Národní návrhová norma** | | | | **Norma materiálu** | | | | | | **Model** | | | | | **Ex [N/mm2]** | | | | **Ey [N/mm2]** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | S 235 | Ocel | | Eurocode-CZ | | | | 10025-2 | | | | | | Lineární | | | | | 210000 | | | | 210000 | | | |
|  | **Jméno** | **n** | **aT [1/°C]** | | **r [kg/m3]** | | **Materiál**  **barva** | | **Obrys**  **barva** | | | **Textura** | | | | | **P1** | | | | | | | **P2** | | | |
| 1 | S 235 | 0,30 | 1,2E-5 | | 7850 | | ...... | | ...... | | | Steel | | | | | fy[N/mm2] = 235,00 | | | | | | | fu[N/mm2] = 360,00 | | | |
|  | **Jméno** | **P3** | | | | **P4** | | | | **P5** | **P6** | | **P7** | | **P8** | **P9** | | **P10** | | **P11** | **P12** | **P13** | | | **P14** |
| 1 | S 235 | fy\*[N/mm2] = 215,00 | | | | fu\*[N/mm2] = 360,00 | | | |  |  | |  | |  |  | |  | |  |  |  | | |  |

### Průřezy

|  | **Jméno** | **Kresba** | | **Proces** | | | | | **Tvar** | | **h**  **[mm]** | | | | | **b**  **[mm]** | | **tw**  **[mm]** | **tf**  **[mm]** | | | **r1**  **[mm]** | | **r2**  **[mm]** | | **r3**  **[mm]** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | HE 220 A |  | | Válcovaný | | | | | I | | 210,0 | | | | | 220,0 | | 7,0 | 11,0 | | | 18,0 | | 0 | | 0 | |
| 2 | IPE 160 |  | | Válcovaný | | | | | I | | 160,0 | | | | | 82,0 | | 5,0 | 7,4 | | | 9,0 | | 0 | | 0 | |
|  | **Jméno** | **Ax**  **[mm2]** | | **Ay**  **[mm2]** | | | **Az**  **[mm2]** | | | | | **Ix**  **[mm4]** | | | | | **Iy**  **[mm4]** | | | **Iz**  **[mm4]** | | | **Iyz**  **[mm4]** | | **I1**  **[mm4]** | | | | | **I2**  **[mm4]** | | **a**  **[°]** | |
| 1 | HE 220 A | 6435,42 | | 4367,99 | | | 1424,01 | | | | | 287198,6 | | | | | 5,4E+07 | | | 2E+07 | | | 0 | | 5,4E+07 | | | | | 2E+07 | | 0 | |
| 2 | IPE 160 | 2009,45 | | 1121,75 | | | 776,35 | | | | | 35972,9 | | | | | 8694482,0 | | | 683158,7 | | | 0 | | 8694482,0 | | | | | 683158,6 | | 0 | |
|  | **Jméno** | **Iw**  **[mm6]** | | | **W1,el,t**  **[mm3]** | | | **W1,el,b**  **[mm3]** | | | | | | **W2,el,t**  **[mm3]** | | | | **W2,el,b**  **[mm3]** | | | **W1,pl**  **[mm3]** | | | **W2,pl**  **[mm3]** | | | **iy**  **[mm]** | | **iz**  **[mm]** | | **Hy**  **[mm]** | | **Hz**  **[mm]** | |
| 1 | HE 220 A | 1,9E+11 | | | 515304,0 | | | 515304,0 | | | | | | 177688,9 | | | | 177688,9 | | | 568570,3 | | | 270607,6 | | | 91,7 | | 55,1 | | 220,0 | | 210,0 | |
| 2 | IPE 160 | 3,9E+09 | | | 108681,0 | | | 108681,0 | | | | | | 16662,4 | | | | 16662,4 | | | 123882,0 | | | 26101,8 | | | 65,8 | | 18,4 | | 82,0 | | 160,0 | |
|  | **Jméno** | **yG**  **[mm]** | **zG**  **[mm]** | | | **ys**  **[mm]** | | | | **zs**  **[mm]** | | | **B.n.** | |
| 1 | HE 220 A | 110,0 | 105,0 | | | 0 | | | | 0 | | | 9 | |
| 2 | IPE 160 | 41,0 | 80,0 | | | 0 | | | | 0 | | | 9 | |

### Zatěžovací stavy

|  | **Jméno** | **Skupina** | **Typ skupiny** |
| --- | --- | --- | --- |
| 1 | vlastní tíha | stálé | Stálé |
| 2 | VZT | proměnné | Nahodilé |

### Skupiny zatížení (Eurocode-CZ)

|  | **Skupina** | **Typ** | **gG,sup** | **gG,inf** | **x** | **g** | **Y0** | **Y1** | **Y2** | **Současné zat.** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | stálé | Stálé | 1,350 | 1,000 | 0,850 |  |  |  |  | 1 |
| 2 | proměnné | Nahodilé |  |  |  | 1,500 | 0 | 0 | 0 | 0 |

### Uzly

|  | **X [m]** | **Y [m]** | **Z [m]** |
| --- | --- | --- | --- |
| 1 | 2,700 | 10,600 | 0 |
| 2 | 2,700 | 20,250 | 0 |
| 3 | 4,370 | 10,600 | 0 |
| 4 | 4,370 | 20,250 | 0 |
| 5 | 2,700 | 14,000 | 0 |
| 6 | 4,370 | 14,000 | 0 |
| 7 | 2,700 | 16,230 | 0 |
| 8 | 4,370 | 16,230 | 0 |
| 9 | 2,700 | 17,050 | 0 |
| 10 | 4,370 | 17,050 | 0 |
| 11 | 2,700 | 17,390 | 0 |
| 12 | 4,370 | 17,390 | 0 |

### Nosníky

|  | **Uzel i** | **Uzel j** | **Délka** | **Lokální x** | **Materiál** | **Počátek**  **průřez** | **Konec**  **průřez** | **Refz** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | ® 5 | 3,400 | i - j | S 235 | 1 | 1 | Auto |
| 2 | 3 | ® 6 | 3,400 | i - j | S 235 | 1 | 1 | Auto |
| 3 | 5 | ® 6 | 1,670 | i - j | S 235 | 2 | 2 | Auto |
| 4 | 7 | ® 8 | 1,670 | i - j | S 235 | 2 | 2 | Auto |
| 5 | 5 | ® 7 | 2,230 | i - j | S 235 | 1 | 1 | Auto |
| 6 | 6 | ® 8 | 2,230 | i - j | S 235 | 1 | 1 | Auto |
| 7 | 9 | ® 10 | 1,670 | i - j | S 235 | 2 | 2 | Auto |
| 8 | 7 | ® 9 | 0,820 | i - j | S 235 | 1 | 1 | Auto |
| 9 | 8 | ® 10 | 0,820 | i - j | S 235 | 1 | 1 | Auto |
| 10 | 11 | ® 12 | 1,670 | i - j | S 235 | 2 | 2 | Auto |
| 11 | 2 | ¬ 9 | 3,200 | j - i | S 235 | 1 | 1 | Auto |
| 12 | 4 | ¬ 10 | 3,200 | j - i | S 235 | 1 | 1 | Auto |

### Uzlové podpory

|  | **Uzel** | **X [m]** | | **Y [m]** | | **Z [m]** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 2,700 | | 20,250 | | 0 |
| 2 | 4 | 4,370 | | 20,250 | | 0 |
| 3 | 1 | 2,700 | | 10,600 | | 0 |
| 4 | 3 | 4,370 | | 10,600 | | 0 |
|  | **Uzel** | **Typ** | **Jménoz** | | | | | **Kz**  **[kN/m]** | | **KzV**  **[kN/m]** | | **Jménoxx** | | **Kxx**  **[kNm/rad]** | **KxxV**  **[kNm/rad]** | **Jménoyy** | **Kyy**  **[kNm/rad]** |
| 1 | 2 | Glob. | Tuhý - Translační | | | | | 1E+10 | | 1E+10 | | — | | – | – | — | – |
| 2 | 4 | Glob. | Tuhý - Translační | | | | | 1E+10 | | 1E+10 | | — | | – | – | — | – |
| 3 | 1 | Glob. | Tuhý - Translační | | | | | 1E+10 | | 1E+10 | | — | | – | – | — | – |
| 4 | 3 | Glob. | Tuhý - Translační | | | | | 1E+10 | | 1E+10 | | — | | – | – | — | – |
|  | **Uzel** | **KyyV**  **[kNm/rad]** | | | **Jménozz** | | | | **Kzz**  **[kNm/rad]** | | **KzzV**  **[kNm/rad]** | |
| 1 | 2 | – | | | Tuhý - Rotační | | | | 1E+10 | | 1E+10 | |
| 2 | 4 | – | | | Tuhý - Rotační | | | | 1E+10 | | 1E+10 | |
| 3 | 1 | – | | | Tuhý - Rotační | | | | 1E+10 | | 1E+10 | |
| 4 | 3 | – | | | Tuhý - Rotační | | | | 1E+10 | | 1E+10 | |

### vlastní tíha: Vlastní tíha nosníku

|  | **S [kg]** |
| --- | --- |
| 1–14 | 1080,369 |
| **Celkem** | **1080,369** |

### VZT: Uzlové zatížení

|  | **Směr** | **Fx**  **[kN]** | **Fy**  **[kN]** | **Fz**  **[kN]** | **Mx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 5 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 6 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 7 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 8 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 9 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 10 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 11 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 12 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |

# Logické části

## Nosníky



Dokument Nosníky



Dokument Nosníky, vlastní tíha

### vlastní tíha: Vlastní tíha nosníku [Části]

|  | **S [kg]** |
| --- | --- |
| 1–14 | 1080,369 |
| **Celkem** | **1080,369** |

### VZT: Uzlové zatížení [Části]

|  | **Směr** | **Fx**  **[kN]** | **Fy**  **[kN]** | **Fz**  **[kN]** | **Mx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 5 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 6 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 7 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 8 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 9 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 10 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 11 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |
| 12 | Globální | 0 | 0 | -1,22 | 0 | 0 | 0 |

### Lineární statická analýza

#### Posuny

Uzlové posunutí

Kritické Min, Max.

### Uzlové posunutí [Lineární,(MSP Charakteristická) Kritická, Části]

|  | **C** | **min.**  **max.** | **eX**  **[mm]** | **eY**  **[mm]** | **eZ**  **[mm]** | **eR**  **[mm]** | **fX**  **[rad]** | **fY**  **[rad]** | **fZ**  **[rad]** | **fR**  **[rad]** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | eX | min | **0** | 0 | 0 | 0 | -0,00186 | 0,00002 | 0 | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 1 |  | max | **0** | 0 | 0 | 0 | -0,00186 | 0,00002 | 0 | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 1 | eY | min | 0 | **0** | 0 | 0 | -0,00186 | 0,00002 | 0 | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 1 |  | max | 0 | **0** | 0 | 0 | -0,00186 | 0,00002 | 0 | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 7 | eZ | min | 0 | 0 | **-12,345** | 12,345 | 0,00092 | 0,00002 | 0 | 0,00092 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 8 |  | min | 0 | 0 | **-12,345** | 12,345 | 0,00092 | -0,00002 | 0 | 0,00092 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 |  | max | 0 | 0 | **0** | 0 | -0,00186 | 0,00002 | 0 | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 1 | eR | min | 0 | 0 | 0 | **0** | -0,00186 | 0,00002 | 0 | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 7 |  | max | 0 | 0 | -12,345 | **12,345** | 0,00092 | 0,00002 | 0 | 0,00092 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 8 |  | max | 0 | 0 | -12,345 | **12,345** | 0,00092 | -0,00002 | 0 | 0,00092 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | fX | min | 0 | 0 | 0 | 0 | **-0,00400** | 0,00002 | 0 | 0,00400 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 3 |  | min | 0 | 0 | 0 | 0 | **-0,00400** | -0,00002 | 0 | 0,00400 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 2 |  | max | 0 | 0 | 0 | 0 | **0,00425** | 0,00002 | 0 | 0,00425 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 4 |  | max | 0 | 0 | 0 | 0 | **0,00425** | -0,00002 | 0 | 0,00425 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 3 | fY | min | 0 | 0 | 0 | 0 | -0,00186 | **-0,00002** | 0 | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 4 |  | min | 0 | 0 | 0 | 0 | 0,00188 | **-0,00002** | 0 | 0,00188 | ​ ​[vlastní tíha]​ ​ |
| 6 |  | min | 0 | 0 | -5,062 | 5,062 | -0,00082 | **-0,00002** | 0 | 0,00082 | ​ ​[vlastní tíha]​ ​ |
| 8 |  | min | 0 | 0 | -5,487 | 5,487 | 0,00045 | **-0,00002** | 0 | 0,00045 | ​ ​[vlastní tíha]​ ​ |
| 10 |  | min | 0 | 0 | -4,925 | 4,925 | 0,00091 | **-0,00002** | 0 | 0,00091 | ​ ​[vlastní tíha]​ ​ |
| 12 |  | min | 0 | 0 | -4,585 | 4,585 | 0,00109 | **-0,00002** | 0 | 0,00109 | ​ ​[vlastní tíha]​ ​ |
| 1 |  | max | 0 | 0 | 0 | 0 | -0,00186 | **0,00002** | 0 | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 2 |  | max | 0 | 0 | 0 | 0 | 0,00188 | **0,00002** | 0 | 0,00188 | ​ ​[vlastní tíha]​ ​ |
| 5 |  | max | 0 | 0 | -5,062 | 5,062 | -0,00082 | **0,00002** | 0 | 0,00082 | ​ ​[vlastní tíha]​ ​ |
| 7 |  | max | 0 | 0 | -5,487 | 5,487 | 0,00045 | **0,00002** | 0 | 0,00045 | ​ ​[vlastní tíha]​ ​ |
| 9 |  | max | 0 | 0 | -4,925 | 4,925 | 0,00091 | **0,00002** | 0 | 0,00091 | ​ ​[vlastní tíha]​ ​ |
| 11 |  | max | 0 | 0 | -4,585 | 4,585 | 0,00109 | **0,00002** | 0 | 0,00109 | ​ ​[vlastní tíha]​ ​ |
| 1 | fZ | min | 0 | 0 | 0 | 0 | -0,00186 | 0,00002 | **0** | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 1 |  | max | 0 | 0 | 0 | 0 | -0,00186 | 0,00002 | **0** | 0,00186 | ​ ​[vlastní tíha]​ ​ |
| 7 | fR | min | 0 | 0 | -5,487 | 5,487 | 0,00045 | 0,00002 | 0 | **0,00045** | ​ ​[vlastní tíha]​ ​ |
| 8 |  | min | 0 | 0 | -5,487 | 5,487 | 0,00045 | -0,00002 | 0 | **0,00045** | ​ ​[vlastní tíha]​ ​ |
| 2 |  | max | 0 | 0 | 0 | 0 | 0,00425 | 0,00002 | 0 | **0,00425** | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 4 |  | max | 0 | 0 | 0 | 0 | 0,00425 | -0,00002 | 0 | **0,00425** | ​ ​[vlastní tíha] ​ ​VZT​ ​ |

Deformace na nosnících

Kritické Min, Max.

### Deformace na nosnících [Lineární,(MSP Charakteristická) Kritická, Části]

|  | **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **ex**  **[mm]** | **ey**  **[mm]** | **ez**  **[mm]** | **eR**  **[mm]** | **fx**  **[rad]** | **fy**  **[rad]** | **fz**  **[rad]** | **fR**  **[rad]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | 1 | HE 220 A | ex | min | 0 | (1) | **0** | 0 | 0 | 0 | 0,00002 | 0,00186 | 0 | 0,00186 |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | **0** | 0 | 0 | 0 | 0,00002 | 0,00186 | 0 | 0,00186 |
| 1 | 1 | HE 220 A | ey | min | 3,400 | (5) | 0 | **0** | -11,157 | 11,157 | 0,00002 | 0,00191 | 0 | 0,00191 |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | 0 | **0** | 0 | 0 | 0,00002 | 0,00186 | 0 | 0,00186 |
| 5 | 1 | HE 220 A | ez | min | 1,561 |  | 0 | 0 | **-12,662** | 12,662 | 0,00002 | -0,00003 | 0 | 0,00003 |
| 6 | 1 | HE 220 A |  | min | 1,561 |  | 0 | 0 | **-12,662** | 12,662 | -0,00002 | -0,00003 | 0 | 0,00003 |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | 0 | 0 | **0** | 0 | 0,00002 | 0,00186 | 0 | 0,00186 |
| 1 | 1 | HE 220 A | eR | min | 0 | (1) | 0 | 0 | 0 | **0** | 0,00002 | 0,00186 | 0 | 0,00186 |
| 5 | 1 | HE 220 A |  | max | 1,561 |  | 0 | 0 | -12,662 | **12,662** | 0,00002 | -0,00003 | 0 | 0,00003 |
| 6 | 1 | HE 220 A |  | max | 1,561 |  | 0 | 0 | -12,662 | **12,662** | -0,00002 | -0,00003 | 0 | 0,00003 |
| 3 | 2 | IPE 160 | fx | min | 0 | (5) | 0 | 0 | -11,157 | 11,157 | **-0,00191** | 0,00002 | 0 | 0,00191 |
| 10 | 2 | IPE 160 |  | max | 0 | (11) | 0 | 0 | -10,380 | 10,380 | **0,00244** | 0,00002 | 0 | 0,00244 |
| 11 | 1 | HE 220 A | fy | min | 3,200 | (2) | 0 | 0 | 0 | 0 | 0,00002 | **-0,00425** | 0 | 0,00425 |
| 12 | 1 | HE 220 A |  | min | 3,200 | (4) | 0 | 0 | 0 | 0 | -0,00002 | **-0,00425** | 0 | 0,00425 |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | 0 | 0 | 0 | 0 | 0,00002 | **0,00400** | 0 | 0,00400 |
| 2 | 1 | HE 220 A |  | max | 0 | (3) | 0 | 0 | 0 | 0 | -0,00002 | **0,00400** | 0 | 0,00400 |
| 1 | 1 | HE 220 A | fz | min | 3,400 | (5) | 0 | 0 | -11,157 | 11,157 | 0,00002 | 0,00191 | **0** | 0,00191 |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | 0 | 0 | 0 | 0 | 0,00002 | 0,00186 | **0** | 0,00186 |
| 5 | 1 | HE 220 A | fR | min | 1,561 |  | 0 | 0 | -12,662 | 12,662 | 0,00002 | -0,00003 | 0 | **0,00003** |
| 6 | 1 | HE 220 A |  | min | 1,561 |  | 0 | 0 | -12,662 | 12,662 | -0,00002 | -0,00003 | 0 | **0,00003** |
| 11 | 1 | HE 220 A |  | max | 3,200 | (2) | 0 | 0 | 0 | 0 | 0,00002 | -0,00425 | 0 | **0,00425** |
| 12 | 1 | HE 220 A |  | max | 3,200 | (4) | 0 | 0 | 0 | 0 | -0,00002 | -0,00425 | 0 | **0,00425** |

|  | **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — |
| 1 | 1 | HE 220 A | ex | min | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A | ey | min | 3,400 | (5) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 5 | 1 | HE 220 A | ez | min | 1,561 |  | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 6 | 1 | HE 220 A |  | min | 1,561 |  | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A | eR | min | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 5 | 1 | HE 220 A |  | max | 1,561 |  | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 6 | 1 | HE 220 A |  | max | 1,561 |  | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 3 | 2 | IPE 160 | fx | min | 0 | (5) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 10 | 2 | IPE 160 |  | max | 0 | (11) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 11 | 1 | HE 220 A | fy | min | 3,200 | (2) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 12 | 1 | HE 220 A |  | min | 3,200 | (4) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 2 | 1 | HE 220 A |  | max | 0 | (3) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 220 A | fz | min | 3,400 | (5) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 5 | 1 | HE 220 A | fR | min | 1,561 |  | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 6 | 1 | HE 220 A |  | min | 1,561 |  | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 11 | 1 | HE 220 A |  | max | 3,200 | (2) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 12 | 1 | HE 220 A |  | max | 3,200 | (4) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |

#### Vnitřní síly

Vnitřní síly na nosníku

Kritické Min, Max.

### Vnitřní síly na nosníku [Lineární,(Vše MSÚ (a, b)) Kritická, Části]

|  | **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **Nx**  **[kN]** | **Vy**  **[kN]** | **Vz**  **[kN]** | **Tx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | 1 | HE 220 A | Nx | min | 0 | (1) | **0** | 0 | -3,523 | 0 | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | **0** | 0 | -3,523 | 0 | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A | Vy | min | 0 | (1) | 0 | **0** | -3,523 | 0 | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | 0 | **0** | -3,523 | 0 | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A | Vz | min | 0 | (1) | 0 | 0 | **-6,092** | 0 | 0 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 2 | 1 | HE 220 A |  | min | 0 | (3) | 0 | 0 | **-6,092** | 0 | 0 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 11 | 1 | HE 220 A |  | max | 3,200 | (2) | 0 | 0 | **7,309** | 0 | 0 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 12 | 1 | HE 220 A |  | max | 3,200 | (4) | 0 | 0 | **7,309** | 0 | 0 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 1 | 1 | HE 220 A | Tx | min | 0 | (1) | 0 | 0 | -3,523 | **0** | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | 0 | 0 | -3,523 | **0** | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 5 | 1 | HE 220 A | My | min | 2,230 | (7) | 0 | 0 | -0,912 | 0 | **-20,871** | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 6 | 1 | HE 220 A |  | min | 2,230 | (8) | 0 | 0 | -0,912 | 0 | **-20,871** | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 8 | 1 | HE 220 A |  | min | 0 | (7) | 0 | 0 | 1,067 | 0 | **-20,871** | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 9 | 1 | HE 220 A |  | min | 0 | (8) | 0 | 0 | 1,067 | 0 | **-20,871** | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | 0 | 0 | -2,610 | 0 | **0** | 0 | ​ ​[vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A | Mz | min | 0 | (1) | 0 | 0 | -3,523 | 0 | 0 | **0** | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 220 A |  | max | 0 | (1) | 0 | 0 | -3,523 | 0 | 0 | **0** | ​ ​[1,35\*vlastní tíha]​ ​ |

Vnitřní síly v uzlové podpoře

Kritické Min, Max.

### Vnitřní síly v uzlové podpoře [Lineární,(Vše MSÚ (a, b)) Kritická, Části]

|  | **Uzel** | **X [m]** | **Y [m]** | **Z [m]** | **Typ** | **C** | **min.**  **max.** | **Rx**  **[kN]** | **Ry**  **[kN]** | **Rz**  **[kN]** | **Rr**  **[kN]** | **Rzz**  **[kNm]** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | 2 | 2,700 | 20,250 | 0 | Glob. | Rx | min | **0** | 0 | -3,631 | 3,631 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 20,250 | 0 | Glob. |  | max | **0** | 0 | -3,631 | 3,631 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 20,250 | 0 | Glob. | Ry | min | 0 | **0** | -3,631 | 3,631 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 20,250 | 0 | Glob. |  | max | 0 | **0** | -3,631 | 3,631 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 20,250 | 0 | Glob. | Rz | min | 0 | 0 | **-7,309** | 7,309 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 2 | 4 | 4,370 | 20,250 | 0 | Glob. |  | min | 0 | 0 | **-7,309** | 7,309 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 3 | 1 | 2,700 | 10,600 | 0 | Glob. |  | max | 0 | 0 | **-2,610** | 2,610 | 0 | ​ ​[vlastní tíha]​ ​ |
| 4 | 3 | 4,370 | 10,600 | 0 | Glob. |  | max | 0 | 0 | **-2,610** | 2,610 | 0 | ​ ​[vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 20,250 | 0 | Glob. | Rzz | min | 0 | 0 | -3,631 | 3,631 | **0** | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 20,250 | 0 | Glob. |  | max | 0 | 0 | -3,631 | 3,631 | **0** | ​ ​[1,35\*vlastní tíha]​ ​ |

#### Posudek oceli

Jednotkový posudek konstrukčního prvku (Eurocode-CZ)

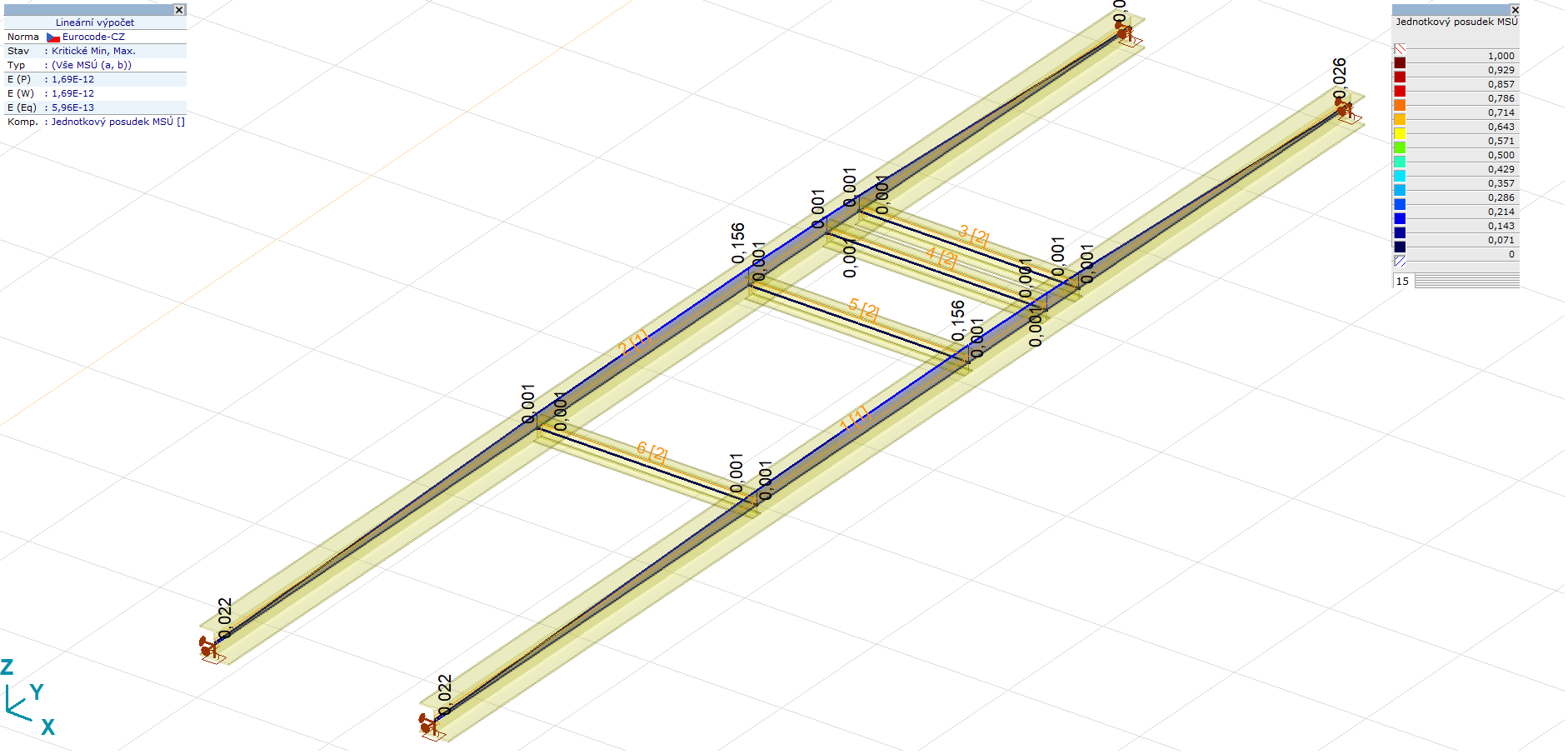
Kritické Min, Max.

### Jednotkový posudek konstrukčního prvku (Eurocode-CZ) [Lineární,(Vše MSÚ (a, b)) Kritická, Části]

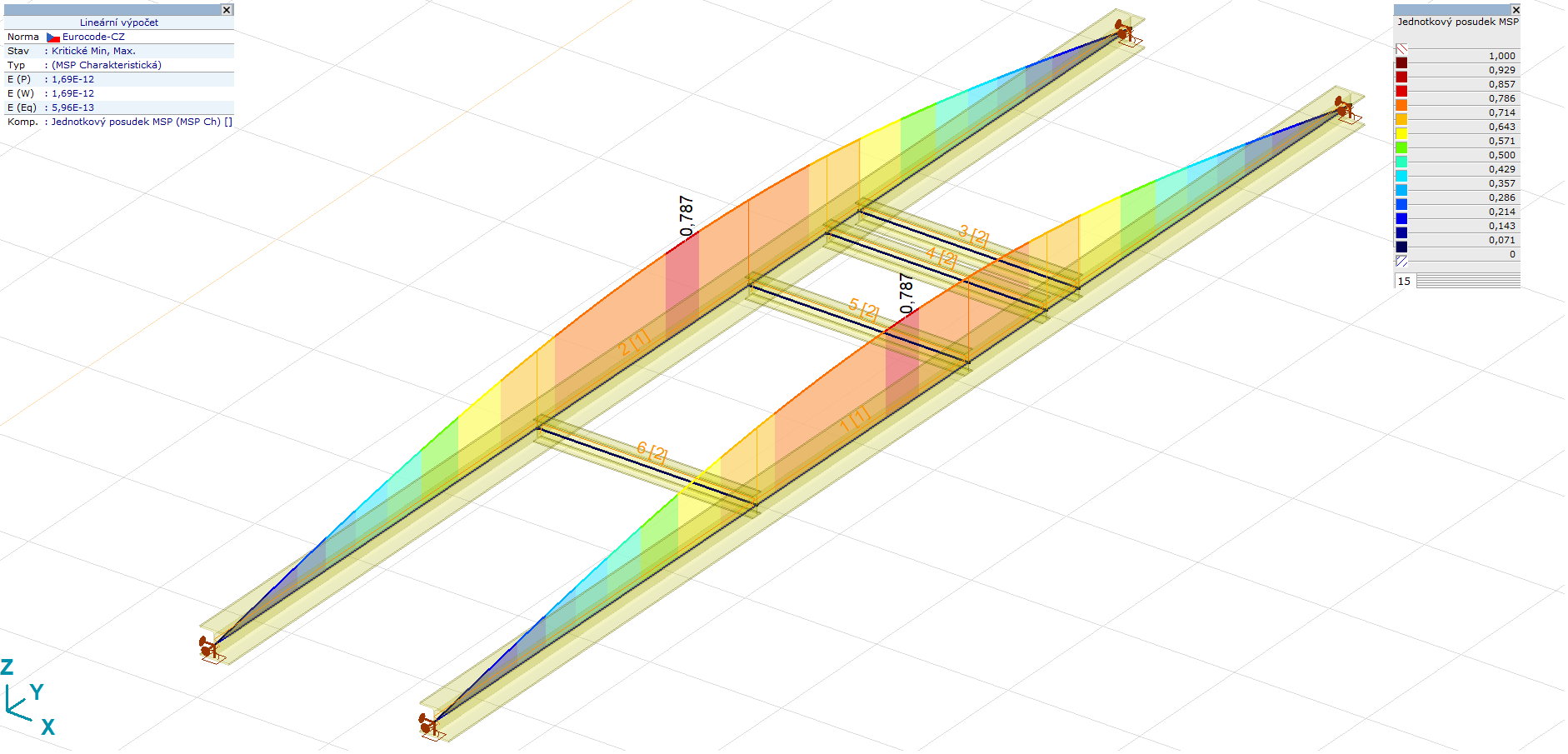
|  | **Prvek** | **Typ** | **Materiál** | **Průřez** | **Max. Poz.**  **[m]** | **Výpočet** | **Max.** |  | **Nx**  **[kN]** | **Vy**  **[kN]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1(3–4) | (Nosník) | S 235 | HE 220 A | 5,630 | N-M-V | 0,156 |  | 0 | 0 |
|  | 2(1–2) | (Nosník) | S 235 | HE 220 A | 5,630 | N-M-V | 0,156 |  | 0 | 0 |
|  | 3(11–12) | (Nosník) | S 235 | IPE 160 | 0,835 | N-M-V | 0,003 |  | 0 | 0 |
|  | 4(9–10) | (Nosník) | S 235 | IPE 160 | 0,835 | N-M-V | 0,003 |  | 0 | 0 |
|  | 5(7–8) | (Nosník) | S 235 | IPE 160 | 0,835 | N-M-V | 0,003 |  | 0 | 0 |
|  | 6(5–6) | (Nosník) | S 235 | IPE 160 | 0,835 | N-M-V | 0,003 |  | 0 | 0 |
| — | — | — | — | — | — | — | — | — | — | — |
|  | 1(3–4) | (Nosník) | S 235 | HE 220 A | 5,630 | N-M-V | 0,156 |  | 0 | 0 |

|  | **Prvek** | **Vz**  **[kN]** | **Tx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** | **Ky** | **Kz** | **Kw** | **Za** | **C1** | **C2** | **C3** | **Křivka**  **třída N** | **cN** | **Křivka**  **třída LT** | **cLT** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1(3–4) | -0,912 | 0 | -20,871 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 1,000 |
|  | 2(1–2) | -0,912 | 0 | -20,871 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 1,000 |
|  | 3(11–12) | 0 | 0 | -0,073 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 1,000 |
|  | 4(9–10) | 0 | 0 | -0,073 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 1,000 |
|  | 5(7–8) | 0 | 0 | -0,073 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 1,000 |
|  | 6(5–6) | 0 | 0 | -0,073 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 1,000 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
|  | 1(3–4) | -0,912 | 0 | -20,871 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 1,000 |

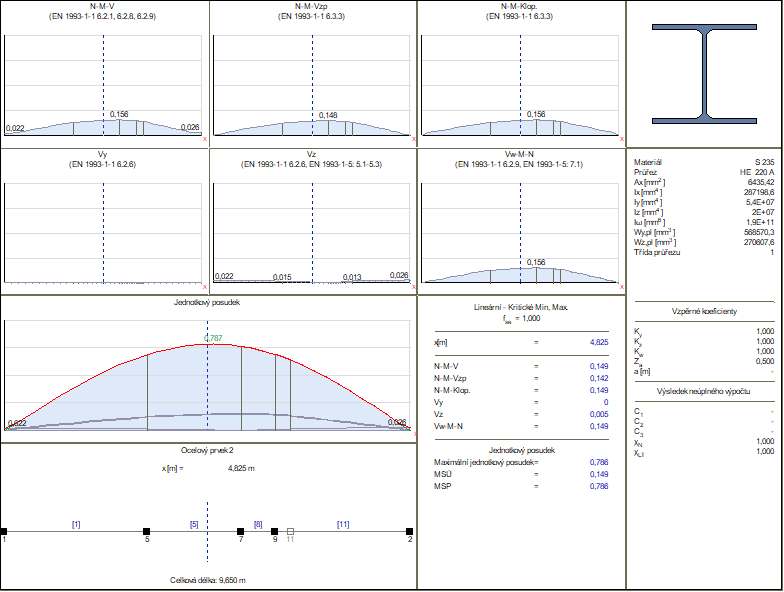
|  | **Prvek** | **a**  **[m]** | **Kritická kombinace** |
| --- | --- | --- | --- |
|  | 1(3–4) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
|  | 2(1–2) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
|  | 3(11–12) |  | ​ ​[1,35\*vlastní tíha]​ ​ |
|  | 4(9–10) |  | ​ ​[1,35\*vlastní tíha]​ ​ |
|  | 5(7–8) |  | ​ ​[1,35\*vlastní tíha]​ ​ |
|  | 6(5–6) |  | ​ ​[1,35\*vlastní tíha]​ ​ |
| — | — | — | — |
|  | 1(3–4) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |



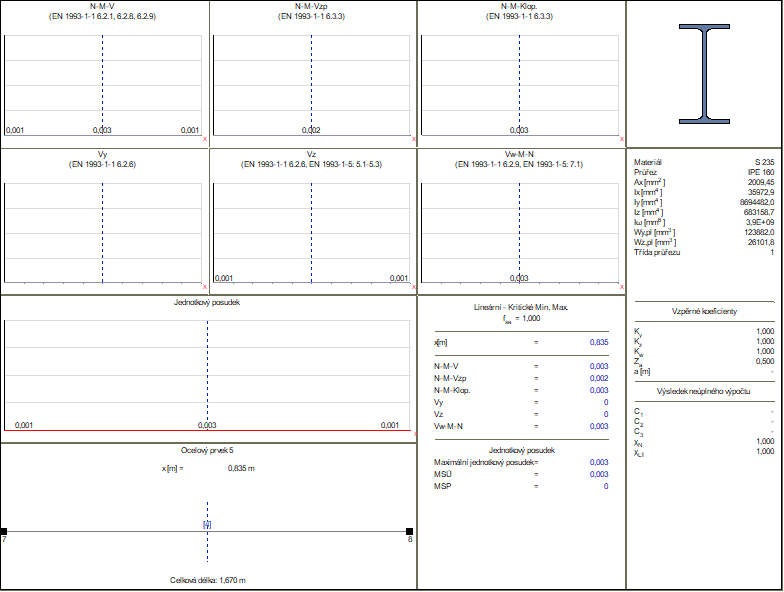
[StI], Lineární,(Auto) Kritická, Jednotkový posudek MSÚ, Vyplněný diagram



[StI], Lineární,(Auto) Kritická, Jednotkový posudek MSP, Vyplněný diagram

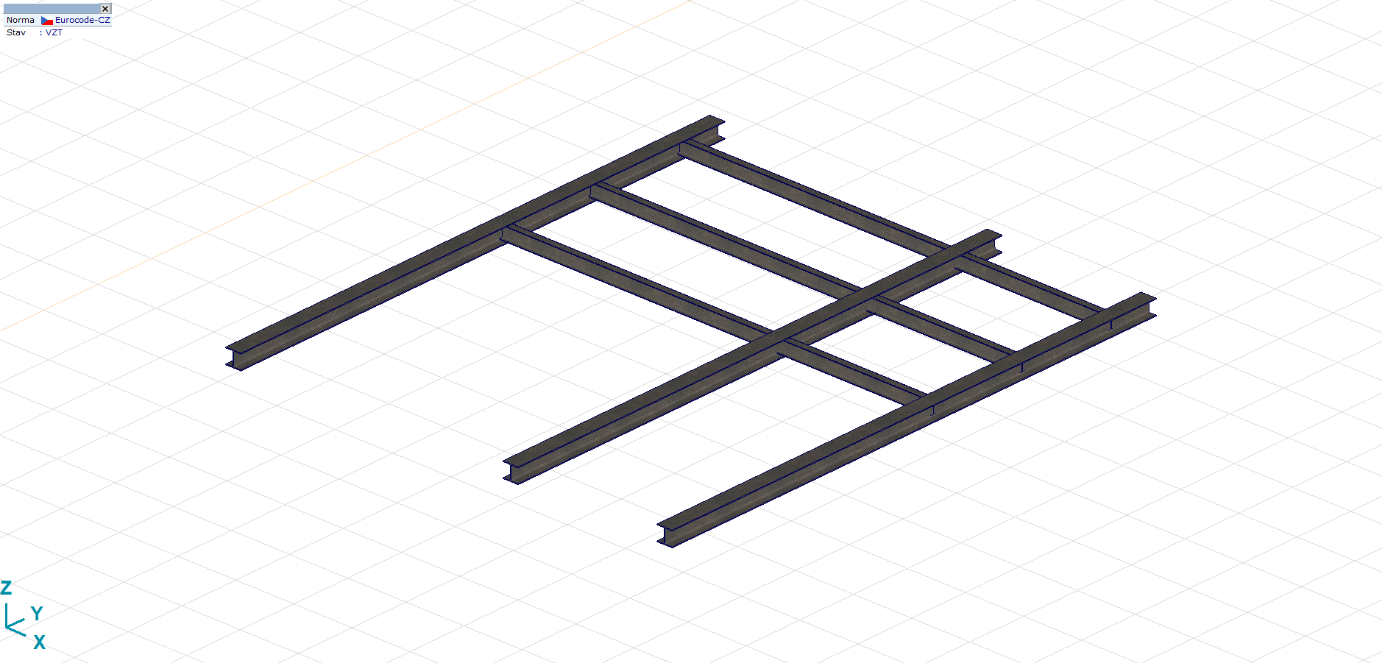


posouzení nosníku



posouzení spojky

*OCELOVÁ KONSTRUKCE VZDUCHOTECHNIKY NA PŮDĚ*



Data modelu Dokument Přehled

### Materiály

|  | **Jméno** | **Typ** | | **Národní návrhová norma** | | | | **Norma materiálu** | | | | | | **Model** | | | | | **Ex [N/mm2]** | | | | **Ey [N/mm2]** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | S 235 | Ocel | | Eurocode-CZ | | | | 10025-2 | | | | | | Lineární | | | | | 210000 | | | | 210000 | | | |
|  | **Jméno** | **n** | **aT [1/°C]** | | **r [kg/m3]** | | **Materiál**  **barva** | | **Obrys**  **barva** | | | **Textura** | | | | | **P1** | | | | | | | **P2** | | | |
| 1 | S 235 | 0,30 | 1,2E-5 | | 7850 | | ...... | | ...... | | | Steel | | | | | fy[N/mm2] = 235,00 | | | | | | | fu[N/mm2] = 360,00 | | | |
|  | **Jméno** | **P3** | | | | **P4** | | | | **P5** | **P6** | | **P7** | | **P8** | **P9** | | **P10** | | **P11** | **P12** | **P13** | | | **P14** |
| 1 | S 235 | fy\*[N/mm2] = 215,00 | | | | fu\*[N/mm2] = 360,00 | | | |  |  | |  | |  |  | |  | |  |  |  | | |  |

### Průřezy

|  | **Jméno** | **Kresba** | | **Proces** | | | | **Tvar** | | **h**  **[mm]** | | | | | **b**  **[mm]** | | **tw**  **[mm]** | | | **tf**  **[mm]** | | **r1**  **[mm]** | | **r2**  **[mm]** | | | **r3**  **[mm]** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | HE 260 A |  | | Válcovaný | | | | I | | 250,0 | | | | | 260,0 | | 7,5 | | | 12,5 | | 24,0 | | 0 | | | 0 | |
| 2 | IPE 220 |  | | Válcovaný | | | | I | | 220,0 | | | | | 110,0 | | 5,9 | | | 9,2 | | 12,0 | | 0 | | | 0 | |
|  | **Jméno** | **Ax**  **[mm2]** | | **Ay**  **[mm2]** | | | **Az**  **[mm2]** | | | | **Ix**  **[mm4]** | | | | | **Iy**  **[mm4]** | | | **Iz**  **[mm4]** | | | | **Iyz**  **[mm4]** | | | **I1**  **[mm4]** | | | | **I2**  **[mm4]** | | | **a**  **[°]** | | **Iw**  **[mm6]** |
| 1 | HE 260 A | 8684,24 | | 5947,05 | | | 1856,55 | | | | 526810,3 | | | | | 1E+08 | | | 3,7E+07 | | | | 0 | | | 1E+08 | | | | 3,7E+07 | | | 0 | | 5E+11 |
| 2 | IPE 220 | 3337,62 | | 1866,99 | | | 1266,17 | | | | 91625,1 | | | | | 2,8E+07 | | | 2048900,0 | | | | 0 | | | 2,8E+07 | | | | 2048900,0 | | | 0 | | 2,2E+10 |
|  | **Jméno** | **W1,el,t**  **[mm3]** | | | **W1,el,b**  **[mm3]** | | | | **W2,el,t**  **[mm3]** | | | | **W2,el,b**  **[mm3]** | | | | | **W1,pl**  **[mm3]** | | | **W2,pl**  **[mm3]** | | | | **iy**  **[mm]** | | | **iz**  **[mm]** | | | **Hy**  **[mm]** | **Hz**  **[mm]** | |
| 1 | HE 260 A | 836595,3 | | | 836595,3 | | | | 282124,0 | | | | 282124,0 | | | | | 920009,3 | | | 430197,5 | | | | 109,7 | | | 65,0 | | | 260,0 | 250,0 | |
| 2 | IPE 220 | 252033,9 | | | 252033,9 | | | | 37252,7 | | | | 37252,7 | | | | | 285461,3 | | | 58114,6 | | | | 91,1 | | | 24,8 | | | 110,0 | 220,0 | |
|  | **Jméno** | **yG**  **[mm]** | **zG**  **[mm]** | | | **ys**  **[mm]** | | | **zs**  **[mm]** | | | **B.n.** | |
| 1 | HE 260 A | 130,0 | 125,0 | | | 0 | | | 0 | | | 9 | |
| 2 | IPE 220 | 55,0 | 110,0 | | | 0 | | | 0 | | | 9 | |

### Zatěžovací stavy

|  | **Jméno** | **Skupina** | **Typ skupiny** |
| --- | --- | --- | --- |
| 1 | vlastní tíha | stálé | Stálé |
| 2 | VZT | proměnné | Nahodilé |

### Skupiny zatížení (Eurocode-CZ)

|  | **Skupina** | **Typ** | **gG,sup** | **gG,inf** | **x** | **g** | **Y0** | **Y1** | **Y2** | **Současné zat.** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | stálé | Stálé | 1,350 | 1,000 | 0,850 |  |  |  |  | 1 |
| 2 | proměnné | Nahodilé |  |  |  | 1,500 | 0 | 0 | 0 | 0 |

### Uzly

|  | **X [m]** | **Y [m]** | **Z [m]** |
| --- | --- | --- | --- |
| 1 | 2,700 | 10,600 | 0 |
| 2 | 2,700 | 19,600 | 0 |
| 3 | 7,470 | 10,600 | 0 |
| 4 | 7,470 | 19,600 | 0 |
| 5 | 2,700 | 15,600 | 0 |
| 6 | 7,470 | 15,600 | 0 |
| 7 | 2,700 | 17,250 | 0 |
| 8 | 7,470 | 17,250 | 0 |
| 9 | 2,700 | 18,900 | 0 |
| 10 | 7,470 | 18,900 | 0 |
| 11 | 3,200 | 15,600 | 0 |
| 12 | 3,200 | 17,250 | 0 |
| 13 | 3,200 | 18,900 | 0 |
| 14 | 4,900 | 15,600 | 0 |
| 15 | 4,900 | 17,250 | 0 |
| 16 | 4,900 | 18,900 | 0 |
| 17 | 6,600 | 15,600 | 0 |
| 18 | 6,600 | 17,250 | 0 |
| 19 | 6,600 | 18,900 | 0 |
| 20 | 10,120 | 10,600 | 0 |
| 21 | 10,120 | 15,600 | 0 |
| 22 | 10,120 | 17,250 | 0 |
| 23 | 10,120 | 18,900 | 0 |
| 24 | 10,120 | 19,600 | 0 |
| 25 | 7,970 | 15,600 | 0 |
| 26 | 7,970 | 17,250 | 0 |
| 27 | 7,970 | 18,900 | 0 |
| 28 | 9,670 | 15,600 | 0 |
| 29 | 9,670 | 17,250 | 0 |
| 30 | 9,670 | 18,900 | 0 |

### Nosníky

|  | **Uzel i** | **Uzel j** | **Délka** | **Lokální x** | **Materiál** | **Počátek**  **průřez** | **Konec**  **průřez** | **Refz** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | ® 5 | 5,000 | i - j | S 235 | 1 | 1 | Auto |
| 2 | 3 | ® 6 | 5,000 | i - j | S 235 | 1 | 1 | Auto |
| 3 | 5 | ® 6 | 4,770 | i - j | S 235 | 2 | 2 | Auto |
| 4 | 7 | ® 8 | 4,770 | i - j | S 235 | 2 | 2 | Auto |
| 5 | 5 | ® 7 | 1,650 | i - j | S 235 | 1 | 1 | Auto |
| 6 | 6 | ® 8 | 1,650 | i - j | S 235 | 1 | 1 | Auto |
| 7 | 9 | ® 10 | 4,770 | i - j | S 235 | 2 | 2 | Auto |
| 8 | 7 | ® 9 | 1,650 | i - j | S 235 | 1 | 1 | Auto |
| 9 | 8 | ® 10 | 1,650 | i - j | S 235 | 1 | 1 | Auto |
| 10 | 2 | ¬ 9 | 0,700 | j - i | S 235 | 1 | 1 | Auto |
| 11 | 4 | ¬ 10 | 0,700 | j - i | S 235 | 1 | 1 | Auto |
| 12 | 20 | ® 21 | 5,000 | i - j | S 235 | 1 | 1 | Auto |
| 13 | 21 | ® 22 | 1,650 | i - j | S 235 | 1 | 1 | Auto |
| 14 | 22 | ® 23 | 1,650 | i - j | S 235 | 1 | 1 | Auto |
| 15 | 23 | ® 24 | 0,700 | i - j | S 235 | 1 | 1 | Auto |
| 16 | 6 | ® 28 | 2,200 | i - j | S 235 | 2 | 2 | Auto |
| 17 | 8 | ® 29 | 2,200 | i - j | S 235 | 2 | 2 | Auto |
| 18 | 10 | ® 30 | 2,200 | i - j | S 235 | 2 | 2 | Auto |
| 19 | 21 | ¬ 28 | 0,450 | j - i | S 235 | 2 | 2 | Auto |
| 20 | 22 | ¬ 29 | 0,450 | j - i | S 235 | 2 | 2 | Auto |
| 21 | 23 | ¬ 30 | 0,450 | j - i | S 235 | 2 | 2 | Auto |

### Uzlové podpory

|  | **Uzel** | **X [m]** | **Y [m]** | **Z [m]** |
| --- | --- | --- | --- | --- |
| 1 | 2 | 2,700 | 19,600 | 0 |
| 2 | 4 | 7,470 | 19,600 | 0 |
| 3 | 1 | 2,700 | 10,600 | 0 |
| 4 | 3 | 7,470 | 10,600 | 0 |
| 5 | 24 | 10,120 | 19,600 | 0 |
| 6 | 20 | 10,120 | 10,600 | 0 |

|  | **Uzel** | **Typ** | **Jménoz** | **Kz**  **[kN/m]** | **KzV**  **[kN/m]** | **Jménoxx** | **Kxx**  **[kNm/rad]** | **KxxV**  **[kNm/rad]** | **Jménoyy** | **Kyy**  **[kNm/rad]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | Glob. | Tuhý - Translační | 1E+10 | 1E+10 | — | – | – | — | – |
| 2 | 4 | Glob. | Tuhý - Translační | 1E+10 | 1E+10 | — | – | – | — | – |
| 3 | 1 | Glob. | Tuhý - Translační | 1E+10 | 1E+10 | — | – | – | — | – |
| 4 | 3 | Glob. | Tuhý - Translační | 1E+10 | 1E+10 | — | – | – | — | – |
| 5 | 24 | Glob. | Tuhý - Translační | 1E+10 | 1E+10 | — | – | – | — | – |
| 6 | 20 | Glob. | Tuhý - Translační | 1E+10 | 1E+10 | — | – | – | — | – |

|  | **Uzel** | **KyyV**  **[kNm/rad]** | **Jménozz** | **Kzz**  **[kNm/rad]** | **KzzV**  **[kNm/rad]** |
| --- | --- | --- | --- | --- | --- |
| 1 | 2 | – | Tuhý - Rotační | 1E+10 | 1E+10 |
| 2 | 4 | – | Tuhý - Rotační | 1E+10 | 1E+10 |
| 3 | 1 | – | Tuhý - Rotační | 1E+10 | 1E+10 |
| 4 | 3 | – | Tuhý - Rotační | 1E+10 | 1E+10 |
| 5 | 24 | – | Tuhý - Rotační | 1E+10 | 1E+10 |
| 6 | 20 | – | Tuhý - Rotační | 1E+10 | 1E+10 |

### vlastní tíha: Vlastní tíha nosníku

|  | **S [kg]** |
| --- | --- |
| 1–33 | 2423,844 |
| **Celkem** | **2423,844** |

### VZT: Uzlové zatížení

|  | **Směr** | **Fx**  **[kN]** | **Fy**  **[kN]** | **Fz**  **[kN]** | **Mx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 11 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 12 | Globální | 0 | 0 | -7,23 | 0 | 0 | 0 |
| 13 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 14 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 15 | Globální | 0 | 0 | -7,23 | 0 | 0 | 0 |
| 16 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 17 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 18 | Globální | 0 | 0 | -7,23 | 0 | 0 | 0 |
| 19 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 25 | Globální | 0 | 0 | -0,52 | 0 | 0 | 0 |
| 26 | Globální | 0 | 0 | -1,05 | 0 | 0 | 0 |
| 27 | Globální | 0 | 0 | -0,52 | 0 | 0 | 0 |
| 28 | Globální | 0 | 0 | -0,52 | 0 | 0 | 0 |
| 29 | Globální | 0 | 0 | -1,05 | 0 | 0 | 0 |
| 30 | Globální | 0 | 0 | -0,52 | 0 | 0 | 0 |

# Logické části

## Nosníky



Dokument Nosníky



Dokument Nosníky, vlastní tíha

### vlastní tíha: Vlastní tíha nosníku [Části]

|  | **S [kg]** |
| --- | --- |
| 1–33 | 2423,844 |
| **Celkem** | **2423,844** |

### VZT: Uzlové zatížení [Části]

|  | **Směr** | **Fx**  **[kN]** | **Fy**  **[kN]** | **Fz**  **[kN]** | **Mx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 11 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 12 | Globální | 0 | 0 | -7,23 | 0 | 0 | 0 |
| 13 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 14 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 15 | Globální | 0 | 0 | -7,23 | 0 | 0 | 0 |
| 16 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 17 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 18 | Globální | 0 | 0 | -7,23 | 0 | 0 | 0 |
| 19 | Globální | 0 | 0 | -3,61 | 0 | 0 | 0 |
| 25 | Globální | 0 | 0 | -0,52 | 0 | 0 | 0 |
| 26 | Globální | 0 | 0 | -1,05 | 0 | 0 | 0 |
| 27 | Globální | 0 | 0 | -0,52 | 0 | 0 | 0 |
| 28 | Globální | 0 | 0 | -0,52 | 0 | 0 | 0 |
| 29 | Globální | 0 | 0 | -1,05 | 0 | 0 | 0 |
| 30 | Globální | 0 | 0 | -0,52 | 0 | 0 | 0 |

### Lineární statická analýza

#### Posuny

Uzlové posunutí

Kritické Min, Max.

### Uzlové posunutí [Lineární,(MSP Charakteristická) Kritická, Části]

|  | **C** | **min.**  **max.** | **eX**  **[mm]** | **eY**  **[mm]** | **eZ**  **[mm]** | **eR**  **[mm]** | **fX**  **[rad]** | **fY**  **[rad]** | **fZ**  **[rad]** | **fR**  **[rad]** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | eX | min | **0** | 0 | 0 | 0 | -0,00119 | 0,00030 | 0 | 0,00123 | ​ ​[vlastní tíha]​ ​ |
| 1 |  | max | **0** | 0 | 0 | 0 | -0,00119 | 0,00030 | 0 | 0,00123 | ​ ​[vlastní tíha]​ ​ |
| 1 | eY | min | 0 | **0** | 0 | 0 | -0,00119 | 0,00030 | 0 | 0,00123 | ​ ​[vlastní tíha]​ ​ |
| 1 |  | max | 0 | **0** | 0 | 0 | -0,00119 | 0,00030 | 0 | 0,00123 | ​ ​[vlastní tíha]​ ​ |
| 14 | eZ | min | 0 | 0 | **-17,558** | 17,558 | 0,00032 | 0,00025 | 0 | 0,00041 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 |  | max | 0 | 0 | **0** | 0 | -0,00119 | 0,00030 | 0 | 0,00123 | ​ ​[vlastní tíha]​ ​ |
| 1 | eR | min | 0 | 0 | 0 | **0** | -0,00119 | 0,00030 | 0 | 0,00123 | ​ ​[vlastní tíha]​ ​ |
| 14 |  | max | 0 | 0 | -17,558 | **17,558** | 0,00032 | 0,00025 | 0 | 0,00041 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | fX | min | 0 | 0 | 0 | 0 | **-0,00454** | 0,00224 | 0 | 0,00506 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 2 |  | max | 0 | 0 | 0 | 0 | **0,00555** | 0,00159 | 0 | 0,00577 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 20 | fY | min | 0 | 0 | 0 | 0 | -0,00147 | **-0,00385** | 0 | 0,00412 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 21 |  | min | 0 | 0 | -4,250 | 4,250 | 0,00022 | **-0,00385** | 0 | 0,00386 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 7 |  | max | 0 | 0 | -11,191 | 11,191 | 0,00332 | **0,00325** | 0 | 0,00464 | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | fZ | min | 0 | 0 | 0 | 0 | -0,00119 | 0,00030 | **0** | 0,00123 | ​ ​[vlastní tíha]​ ​ |
| 1 |  | max | 0 | 0 | 0 | 0 | -0,00119 | 0,00030 | **0** | 0,00123 | ​ ​[vlastní tíha]​ ​ |
| 14 | fR | min | 0 | 0 | -3,921 | 3,921 | 0,00017 | 0,00011 | 0 | **0,00020** | ​ ​[vlastní tíha]​ ​ |
| 2 |  | max | 0 | 0 | 0 | 0 | 0,00555 | 0,00159 | 0 | **0,00577** | ​ ​[vlastní tíha] ​ ​VZT​ ​ |

Deformace na nosnících

Kritické Min, Max.

### Deformace na nosnících [Lineární,(MSP Charakteristická) Kritická, Části]

|  | **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **ex**  **[mm]** | **ey**  **[mm]** | **ez**  **[mm]** | **eR**  **[mm]** | **fx**  **[rad]** | **fy**  **[rad]** | **fz**  **[rad]** | **fR**  **[rad]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | 1 | HE 260 A | ex | min | 0 | (1) | **0** | 0 | 0 | 0 | 0,00030 | 0,00119 | 0 | 0,00123 |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | **0** | 0 | 0 | 0 | 0,00030 | 0,00119 | 0 | 0,00123 |
| 1 | 1 | HE 260 A | ey | min | 5,000 | (5) | 0 | **0** | -14,251 | 14,251 | 0,00224 | -0,00036 | 0 | 0,00227 |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | 0 | **0** | 0 | 0 | 0,00030 | 0,00119 | 0 | 0,00123 |
| 3 | 2 | IPE 220 | ez | min | 2,370 |  | 0 | 0 | **-17,578** | 17,578 | 0,00032 | -0,00001 | 0 | 0,00032 |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | 0 | 0 | **0** | 0 | 0,00030 | 0,00119 | 0 | 0,00123 |
| 1 | 1 | HE 260 A | eR | min | 0 | (1) | 0 | 0 | 0 | **0** | 0,00030 | 0,00119 | 0 | 0,00123 |
| 3 | 2 | IPE 220 |  | max | 2,370 |  | 0 | 0 | -17,578 | **17,578** | 0,00032 | -0,00001 | 0 | 0,00032 |
| 12 | 1 | HE 260 A | fx | min | 0 | (20) | 0 | 0 | 0 | 0 | **-0,00385** | 0,00147 | 0 | 0,00412 |
| 13 | 1 | HE 260 A |  | min | 0 | (21) | 0 | 0 | -4,250 | 4,250 | **-0,00385** | -0,00022 | 0 | 0,00386 |
| 7 | 2 | IPE 220 |  | max | 0 | (9) | 0 | 0 | -3,828 | 3,828 | **0,00531** | 0,00159 | 0 | 0,00555 |
| 10 | 1 | HE 260 A | fy | min | 0,700 | (2) | 0 | 0 | 0 | 0 | 0,00159 | **-0,00555** | 0 | 0,00577 |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | 0 | 0 | 0 | 0 | 0,00224 | **0,00454** | 0 | 0,00506 |
| 1 | 1 | HE 260 A | fz | min | 5,000 | (5) | 0 | 0 | -14,251 | 14,251 | 0,00224 | -0,00036 | **0** | 0,00227 |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | 0 | 0 | 0 | 0 | 0,00030 | 0,00119 | **0** | 0,00123 |
| 6 | 1 | HE 260 A | fR | min | 0 | (6) | 0 | 0 | -3,757 | 3,757 | -0,00019 | -0,00018 | 0 | **0,00026** |
| 16 | 2 | IPE 220 |  | min | 0 | (6) | 0 | 0 | -3,757 | 3,757 | 0,00018 | -0,00019 | 0 | **0,00026** |
| 10 | 1 | HE 260 A |  | max | 0,700 | (2) | 0 | 0 | 0 | 0 | 0,00159 | -0,00555 | 0 | **0,00577** |

|  | **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — |
| 1 | 1 | HE 260 A | ex | min | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 1 | 1 | HE 260 A | ey | min | 5,000 | (5) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 3 | 2 | IPE 220 | ez | min | 2,370 |  | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 1 | 1 | HE 260 A | eR | min | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 3 | 2 | IPE 220 |  | max | 2,370 |  | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 12 | 1 | HE 260 A | fx | min | 0 | (20) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 13 | 1 | HE 260 A |  | min | 0 | (21) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 7 | 2 | IPE 220 |  | max | 0 | (9) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 10 | 1 | HE 260 A | fy | min | 0,700 | (2) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 260 A | fz | min | 5,000 | (5) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | ​ ​[vlastní tíha]​ ​ |
| 6 | 1 | HE 260 A | fR | min | 0 | (6) | ​ ​[vlastní tíha]​ ​ |
| 16 | 2 | IPE 220 |  | min | 0 | (6) | ​ ​[vlastní tíha]​ ​ |
| 10 | 1 | HE 260 A |  | max | 0,700 | (2) | ​ ​[vlastní tíha] ​ ​VZT​ ​ |

#### Vnitřní síly

Vnitřní síly na nosníku

Kritické Min, Max.

### Vnitřní síly na nosníku [Lineární,(Vše MSÚ (a, b)) Kritická, Části]

|  | **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **Nx**  **[kN]** | **Vy**  **[kN]** | **Vz**  **[kN]** | **Tx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | 1 | HE 260 A | Nx | min | 0 | (1) | **0** | 0 | -4,738 | 0 | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | **0** | 0 | -4,738 | 0 | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 260 A | Vy | min | 0 | (1) | 0 | **0** | -4,738 | 0 | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | 0 | **0** | -4,738 | 0 | 0 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 4 | 2 | IPE 220 | Vz | min | 0 | (7) | 0 | 0 | **-17,508** | 0 | 0,102 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 11 | 1 | HE 260 A |  | max | 0,700 | (4) | 0 | 0 | **32,224** | 0 | 0 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 8 | 1 | HE 260 A | Tx | min | 0 | (7) | 0 | 0 | 19,715 | **-0,063** | -54,542 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 14 | 1 | HE 260 A |  | max | 0 | (22) | 0 | 0 | 3,845 | **0,073** | -11,041 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 1 | 1 | HE 260 A | My | min | 5,000 | (5) | 0 | 0 | -9,509 | 0 | **-57,138** | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 5 | 1 | HE 260 A |  | min | 0 | (5) | 0 | 0 | 0,940 | 0,039 | **-57,138** | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 18 | 2 | IPE 220 |  | max | 0 | (10) | 0 | 0 | -2,542 | -0,015 | **3,581** | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 1 | 1 | HE 260 A | Mz | min | 0 | (1) | 0 | 0 | -4,738 | 0 | 0 | **0** | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 1 | HE 260 A |  | max | 0 | (1) | 0 | 0 | -4,738 | 0 | 0 | **0** | ​ ​[1,35\*vlastní tíha]​ ​ |

Vnitřní síly v uzlové podpoře

Kritické Min, Max.

### Vnitřní síly v uzlové podpoře [Lineární,(Vše MSÚ (a, b)) Kritická, Části]

|  | **Uzel** | **X [m]** | **Y [m]** | **Z [m]** | **Typ** | **C** | **min.**  **max.** | **Rx**  **[kN]** | **Ry**  **[kN]** | **Rz**  **[kN]** | **Rr**  **[kN]** | **Rzz**  **[kNm]** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | 2 | 2,700 | 19,600 | 0 | Glob. | Rx | min | **0** | 0 | -5,863 | 5,863 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 19,600 | 0 | Glob. |  | max | **0** | 0 | -5,863 | 5,863 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 19,600 | 0 | Glob. | Ry | min | 0 | **0** | -5,863 | 5,863 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 19,600 | 0 | Glob. |  | max | 0 | **0** | -5,863 | 5,863 | 0 | ​ ​[1,35\*vlastní tíha]​ ​ |
| 2 | 4 | 7,470 | 19,600 | 0 | Glob. | Rz | min | 0 | 0 | **-32,224** | 32,224 | 0 | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| 6 | 20 | 10,120 | 10,600 | 0 | Glob. |  | max | 0 | 0 | **-3,313** | 3,313 | 0 | ​ ​[vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 19,600 | 0 | Glob. | Rzz | min | 0 | 0 | -5,863 | 5,863 | **0** | ​ ​[1,35\*vlastní tíha]​ ​ |
| 1 | 2 | 2,700 | 19,600 | 0 | Glob. |  | max | 0 | 0 | -5,863 | 5,863 | **0** | ​ ​[1,35\*vlastní tíha]​ ​ |

#### Posudek oceli

Jednotkový posudek konstrukčního prvku (Eurocode-CZ)

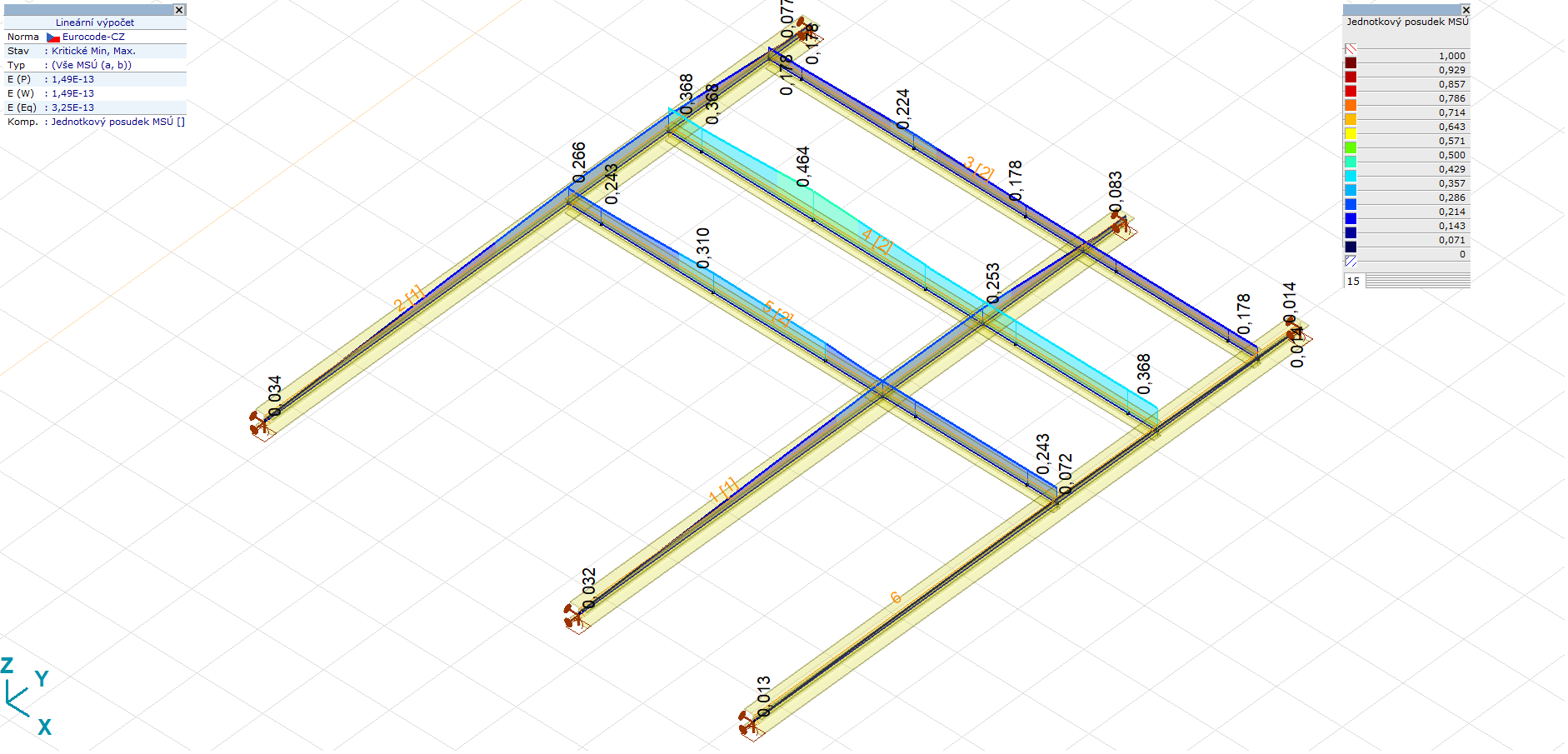
Kritické Min, Max.

### Jednotkový posudek konstrukčního prvku (Eurocode-CZ) [Lineární,(Vše MSÚ (a, b)) Kritická, Části]

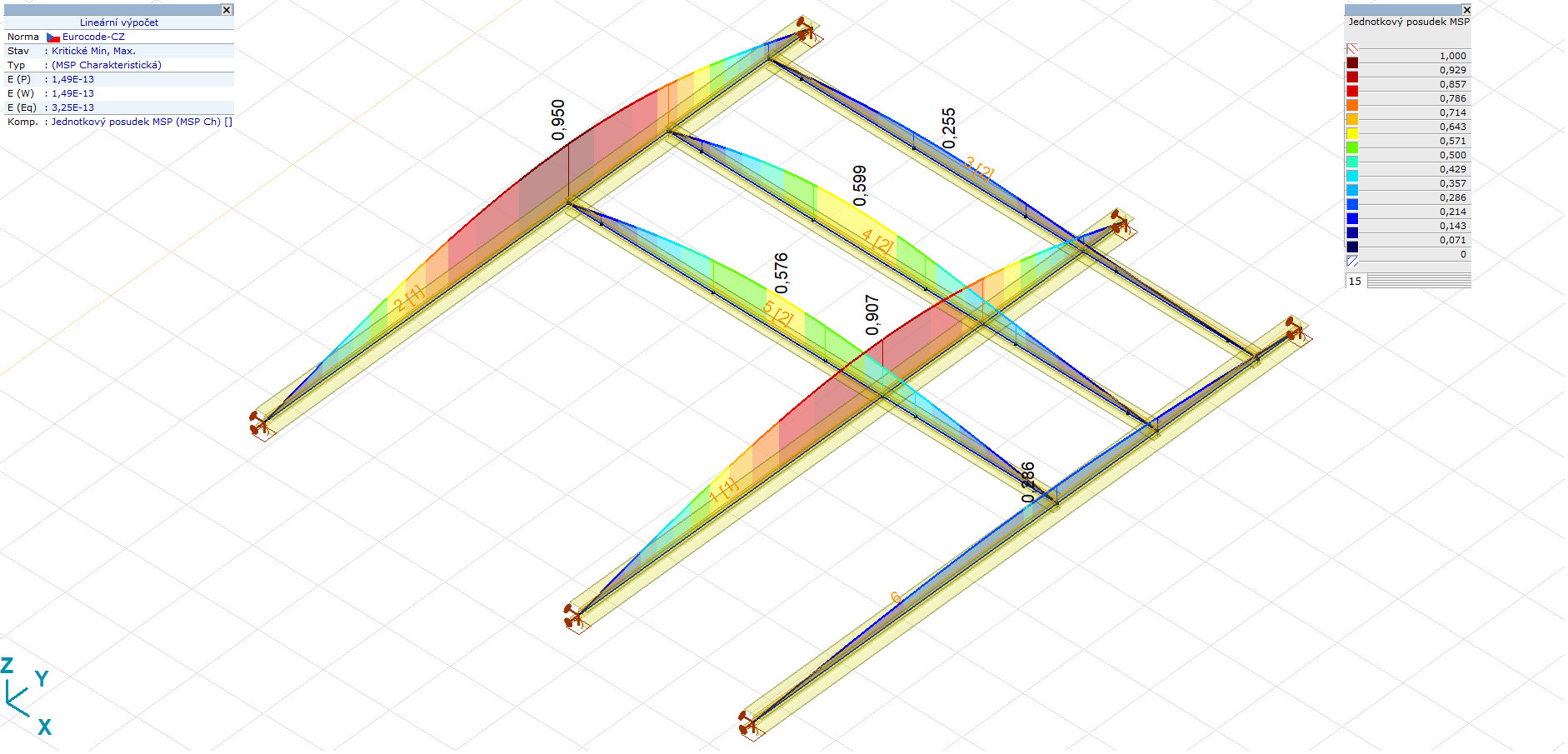
|  | **Prvek** | **Typ** | **Materiál** | **Průřez** | **Max. Poz.**  **[m]** | **Výpočet** | **Max.** |  | **Nx**  **[kN]** | **Vy**  **[kN]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1(3–4) | (Nosník) | S 235 | HE 260 A | 6,650 | N-M-Klop. | 0,253 |  | 0 | 0 |
|  | 2(1–2) | (Nosník) | S 235 | HE 260 A | 5,000 | N-M-Klop. | 0,266 |  | 0 | 0 |
|  | 3(9–23) | (Nosník) | S 235 | IPE 220 | 2,200 | N-M-Klop. | 0,224 |  | 0 | 0 |
|  | 4(7–22) | (Nosník) | S 235 | IPE 220 | 2,200 | N-M-Klop. | 0,464 |  | 0 | 0 |
|  | 5(5–21) | (Nosník) | S 235 | IPE 220 | 2,200 | N-M-Klop. | 0,310 |  | 0 | 0 |
|  | 6(20–24) | (Nosník) | S 235 | HE 260 A | 5,000 | N-M-Klop. | 0,072 |  | 0 | 0 |
| — | — | — | — | — | — | — | — | — | — | — |
|  | 4(7–22) | (Nosník) | S 235 | IPE 220 | 2,200 | N-M-Klop. | 0,464 |  | 0 | 0 |

|  | **Prvek** | **Vz**  **[kN]** | **Tx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** | **Ky** | **Kz** | **Kw** | **Za** | **C1** | **C2** | **C3** | **Křivka**  **třída N** | **cN** | **Křivka**  **třída LT** | **cLT** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1(3–4) | 18,934 | 0,069 | -54,640 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,999 |
|  | 2(1–2) | 0,940 | 0,039 | -57,138 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,995 |
|  | 3(9–23) | -2,643 | 0 | -9,298 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,618 |
|  | 4(7–22) | -6,014 | 0 | -19,265 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,620 |
|  | 5(5–21) | -4,385 | 0 | -13,108 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,630 |
|  | 6(20–24) | -1,123 | 0 | -15,206 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,983 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
|  | 4(7–22) | -6,014 | 0 | -19,265 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,620 |

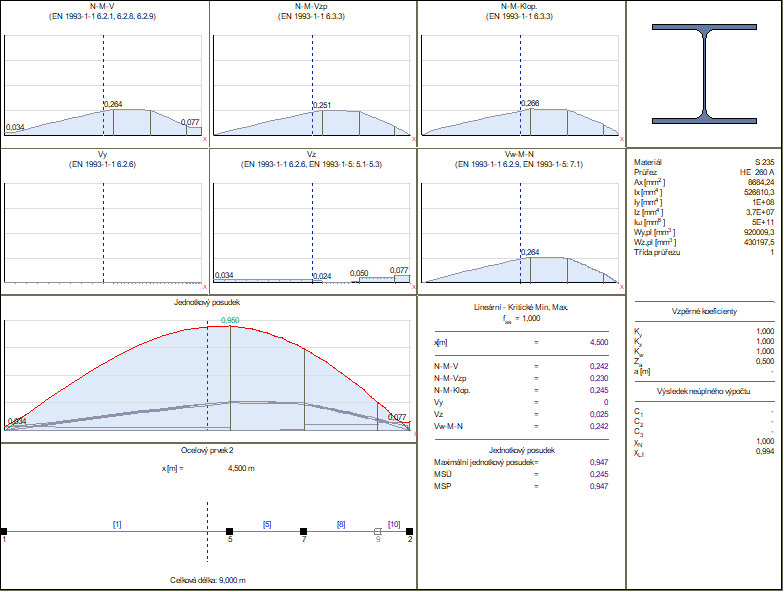
|  | **Prvek** | **a**  **[m]** | **Kritická kombinace** |
| --- | --- | --- | --- |
|  | 1(3–4) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
|  | 2(1–2) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
|  | 3(9–23) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
|  | 4(7–22) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
|  | 5(5–21) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
|  | 6(20–24) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |
| — | — | — | — |
|  | 4(7–22) |  | ​ ​[1,35\*0,85\*vlastní tíha] ​ ​1,5\*VZT​ ​ |



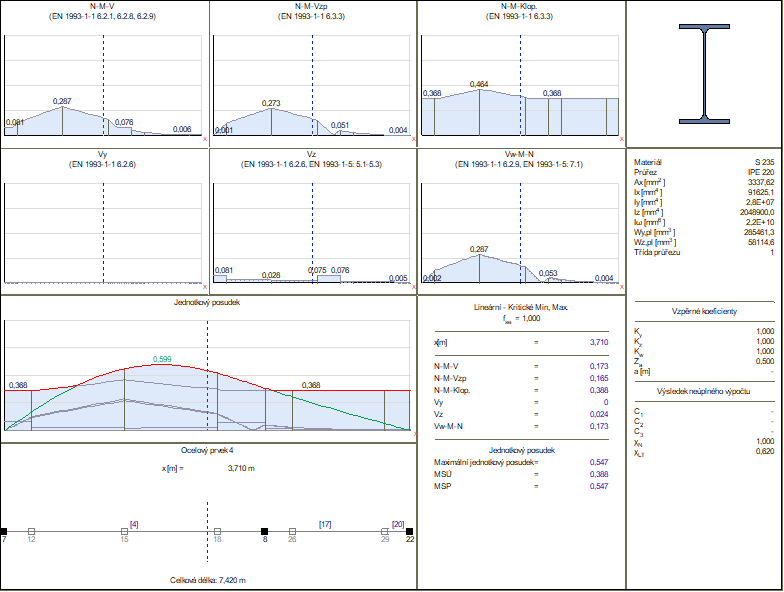
[StI], Lineární,(Auto) Kritická, Jednotkový posudek MSÚ, Vyplněný diagram



[StI], Lineární,(Auto) Kritická, Jednotkový posudek MSP, Vyplněný diagram



posouzení nosníku



posouzení spojky

*HLAVNÍ SPOJ OCELOVÝCH RÁMŮ*

Výpočet: Napětí, přetvoření/ zjednodušené zatížení

Nosníky a sloupy

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Název | Průřez | β – Směr  [°] | γ - Sklon  [°] | α - Pootočení  [°] | Odsazení ex  [mm] | Odsazení ey  [mm] | Odsazení ez  [mm] | Síly v | X  [mm] |
| B | 3 - HEA220 | 0,0 | 0,0 | 0,0 | 0 | 0 | 0 | Uzel | 0 |
| B1 | 5 - IPE160A | -90,0 | 0,0 | 0,0 | 0 | 0 | 0 | Šrouby | 89 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| pic4093671186_AXO.png | **Materiál**   |  |  | | --- | --- | | Ocel | S 355 (EN) | | Šrouby | M12 8.8 | |

Účinky zatížení (rovnováha není požadována)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Název | Prvek | N  [kN] | Vy  [kN] | Vz  [kN] | Mx  [kNm] | My  [kNm] | Mz  [kNm] |
| LE1 | B1 | 3,7 | 0,0 | 7,5 | 0,0 | 0,0 | 0,0 |

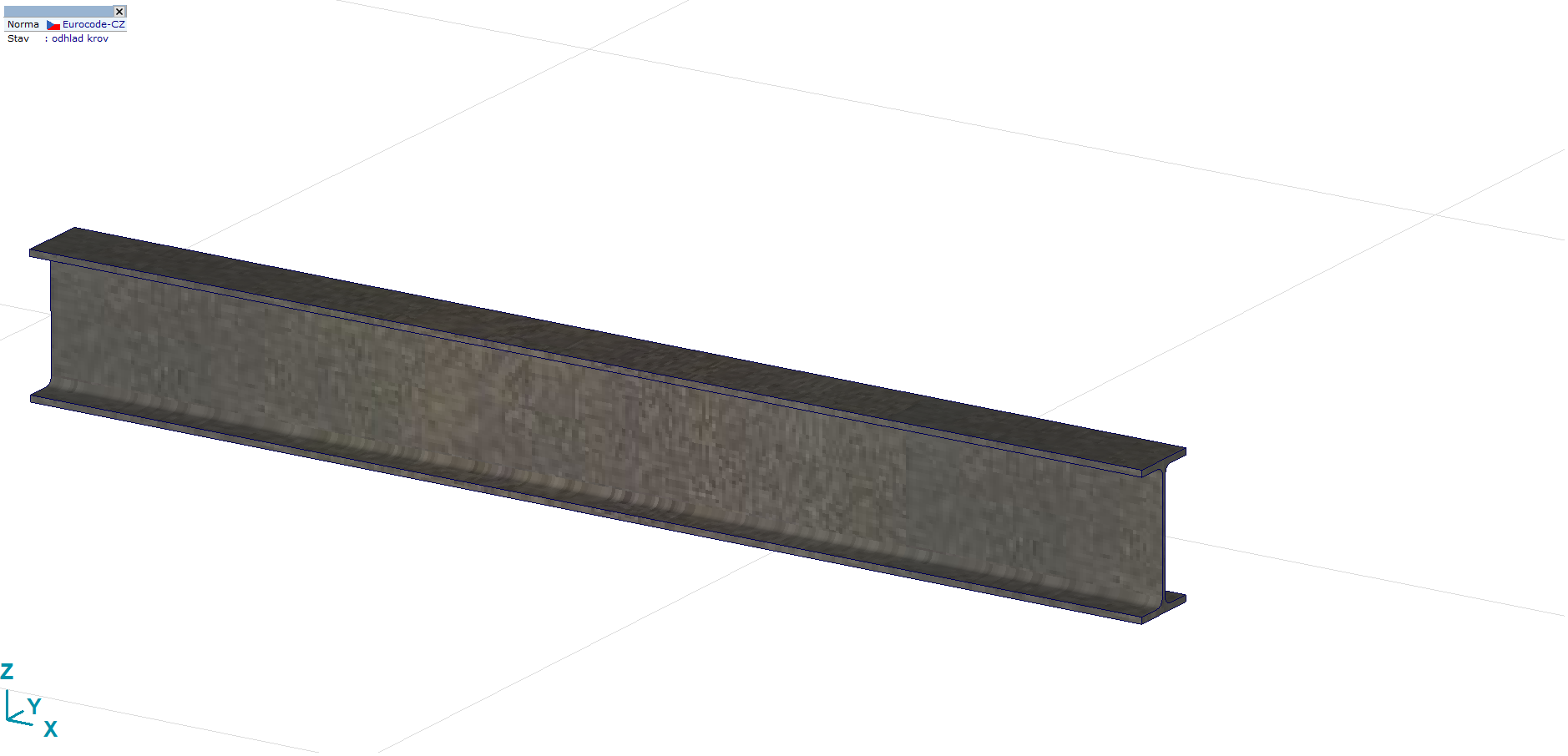
Souhrn

|  |  |  |
| --- | --- | --- |
| Název | Hodnota | Status |
| Výpočet | 100,0% | OK |
| Plechy | 0,0 < 5% | OK |
| Šrouby | 8,2 < 100% | OK |
| Svary | 80,6 < 100% | OK |
| Boulení | 109,51 |  |

Nastavení normy

|  |  |  |  |
| --- | --- | --- | --- |
| Položka | Hodnota | Jednotka | Odkaz |
| γM0 | 1,00 | - | EN 1993-1-1: 6.1 |
| γM1 | 1,00 | - | EN 1993-1-1: 6.1 |
| γM2 | 1,25 | - | EN 1993-1-1: 6.1 |
| γM3 | 1,25 | - | EN 1993-1-8: 2.2 |
| γC | 1,50 | - | EN 1992-1-1: 2.4.2.4 |
| γInst | 1,20 | - | ETAG 001-C: 3.2.1 |
| Součnitel styčníku βj | 0,67 | - | EN 1993-1-8: 6.2.5 |
| Účinná plocha - vliv velikosti sítě | 0,10 | - |  |
| Součinitel tření - beton | 0,25 | - | EN 1993-1-8 |
| Součinitel tření pro třecí spoje | 0,30 | - | EN 1993-1-8 tab 3.7 |
| Mezní plastické přetvoření | 0,05 | - | EN 1993-1-5 |
| Vyhodnocení napětí svarů | Plastická redistribuce |  |  |
| Konstrukční zásady | Ne |  |  |
| Vzdálenost mezi šrouby [d] | 2,20 | - | EN 1993-1-8: tab 3.3 |
| Vzdálenost mezi šrouby a hranou [d] | 1,20 | - | EN 1993-1-8: tab 3.3 |
| Únosnost vytržení betonu | Ano |  | ETAG 001-C |
| Použít vypočtené αb v posudku otlačení. | Ano |  | EN 1993-1-8: tab 3.4 |
| Potrhaný beton | Ano |  |  |
| Kontrola lokální deformace | Ne |  |  |
| Limita lokální deformace | 0,03 | - | CIDECT DG 1, 3 - 1.1 |
| Geometrická nelinearita (GMNA) | Ano |  | Velké deformace pro duté profily |
| Braced system | Ne |  |  |

*PŘEKLAD NAD PROSTUPY*



Dokument Přehled

# Data modelu

### Materiály

|  | **Jméno** | **Typ** | | **Národní návrhová norma** | | | | **Norma materiálu** | | | | | | **Model** | | | | | **Ex [N/mm2]** | | | | **Ey [N/mm2]** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | S 235 | Ocel | | Eurocode-CZ | | | | 10025-2 | | | | | | Lineární | | | | | 210000 | | | | 210000 | | | |
|  | **Jméno** | **n** | **aT [1/°C]** | | **r [kg/m3]** | | **Materiál**  **barva** | | **Obrys**  **barva** | | | **Textura** | | | | | **P1** | | | | | | | **P2** | | | |
| 1 | S 235 | 0,30 | 1,2E-5 | | 7850 | | ...... | | ...... | | | Steel | | | | | fy[N/mm2] = 235,00 | | | | | | | fu[N/mm2] = 360,00 | | | |
|  | **Jméno** | **P3** | | | | **P4** | | | | **P5** | **P6** | | **P7** | | **P8** | **P9** | | **P10** | | **P11** | **P12** | **P13** | | | **P14** |
| 1 | S 235 | fy\*[N/mm2] = 215,00 | | | | fu\*[N/mm2] = 360,00 | | | |  |  | |  | |  |  | |  | |  |  |  | | |  |

### Průřezy

|  | **Jméno** | **Kresba** | **Proces** | | **Tvar** | | **h**  **[mm]** | | | **b**  **[mm]** | | | **tw**  **[mm]** | | **tf**  **[mm]** | | | **r1**  **[mm]** | | **r2**  **[mm]** | | | **r3**  **[mm]** | | | **Ax**  **[mm2]** | | **Ay**  **[mm2]** | | | | **Az**  **[mm2]** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | IPE 160 |  | Válcovaný | | I | | 160,0 | | | 82,0 | | | 5,0 | | 7,4 | | | 9,0 | | 0 | | | 0 | | | 2009,45 | | 1121,75 | | | | 776,35 | | |
|  | **Jméno** | **Ix**  **[mm4]** | **Iy**  **[mm4]** | | | **Iz**  **[mm4]** | | | **Iyz**  **[mm4]** | | | **I1**  **[mm4]** | | | | **I2**  **[mm4]** | | | | **a**  **[°]** | **Iw**  **[mm6]** | | | | **W1,el,t**  **[mm3]** | | | | **W1,el,b**  **[mm3]** | | | |
| 1 | IPE 160 | 35972,9 | 8694482,0 | | | 683158,7 | | | 0 | | | 8694482,0 | | | | 683158,6 | | | | 0 | 3,9E+09 | | | | 108681,0 | | | | 108681,0 | | | |
|  | **Jméno** | **W2,el,t**  **[mm3]** | **W2,el,b**  **[mm3]** | **W1,pl**  **[mm3]** | | | | **W2,pl**  **[mm3]** | | | **iy**  **[mm]** | | | **iz**  **[mm]** | | | **Hy**  **[mm]** | | **Hz**  **[mm]** | | | **yG**  **[mm]** | | **zG**  **[mm]** | | | **ys**  **[mm]** | | | **zs**  **[mm]** | **B.n.** | | |
| 1 | IPE 160 | 16662,4 | 16662,4 | 123882,0 | | | | 26101,8 | | | 65,8 | | | 18,4 | | | 82,0 | | 160,0 | | | 41,0 | | 80,0 | | | 0 | | | 0 | 9 | | |

### Zatěžovací stavy

|  | **Jméno** | **Skupina** | **Typ skupiny** |
| --- | --- | --- | --- |
| 1 | vlastní tíha | stálé | Stálé |
| 2 | střecha | stálé | Stálé |
| 3 | odhlad krov | stálé | Stálé |
| 4 | strop nad 3NP | stálé | Stálé |
| 5 | strop nad 2NP | stálé | Stálé |
| 6 | strop nad 1NP | stálé | Stálé |
| 7 | zdivo | stálé | Stálé |
| 8 | půda | proměnné | Nahodilé |
| 9 | škola | proměnné | Nahodilé |
| 10 | Sníh UD | Sníh | Sníh |

### Skupiny zatížení (Eurocode-CZ)

|  | **Skupina** | **Typ** | **gG,sup** | **gG,inf** | **x** | **g** | **Y0** | **Y1** | **Y2** | **Současné zat.** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | stálé | Stálé | 1,350 | 1,000 | 0,850 |  |  |  |  | 1 |
| 2 | proměnné | Nahodilé |  |  |  | 1,500 | 0,700 | 0,500 | 0,300 | 0 |
| 3 | Sníh | Sníh |  |  |  | 1,500 | 0,500 | 0,200 | 0 |  |

### Uzly

|  | **X [m]** | **Y [m]** | **Z [m]** |
| --- | --- | --- | --- |
| 1 | 2,000 | 3,000 | 0 |
| 2 | 3,300 | 3,000 | 0 |

### Nosníky

|  | **Uzel i** | **Uzel j** | **Délka** | **Lokální x** | **Materiál** | **Počátek**  **průřez** | **Konec**  **průřez** | **Refz** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | ® 2 | 1,300 | i - j | S 235 | 1 | 1 | Auto |

### Uzlové podpory

|  | **Uzel** | **X [m]** | | **Y [m]** | | **Z [m]** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 2,000 | | 3,000 | | 0 |
| 2 | 2 | 3,300 | | 3,000 | | 0 |
|  | **Uzel** | **Typ** | **Jménoz** | | | | | **Kz**  **[kN/m]** | | **KzV**  **[kN/m]** | | **Jménoxx** | | **Kxx**  **[kNm/rad]** | **KxxV**  **[kNm/rad]** | **Jménoyy** | **Kyy**  **[kNm/rad]** |
| 1 | 1 | Glob. | Tuhý - Translační | | | | | 1E+10 | | 1E+10 | | — | | – | – | — | – |
| 2 | 2 | Glob. | Tuhý - Translační | | | | | 1E+10 | | 1E+10 | | — | | – | – | — | – |
|  | **Uzel** | **KyyV**  **[kNm/rad]** | | | **Jménozz** | | | | **Kzz**  **[kNm/rad]** | | **KzzV**  **[kNm/rad]** | |
| 1 | 1 | – | | | Tuhý - Rotační | | | | 1E+10 | | 1E+10 | |
| 2 | 2 | – | | | Tuhý - Rotační | | | | 1E+10 | | 1E+10 | |

### vlastní tíha: Vlastní tíha nosníku

|  | **S [kg]** |
| --- | --- |
| 1 | 20,506 |
| **Celkem** | **20,506** |

### střecha: Liniové zatížení na nosníky a žebra

|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -0,45 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -0,45 | 0 |

### odhlad krov: Liniové zatížení na nosníky a žebra

|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -1,00 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -1,00 | 0 |

### strop nad 3NP: Liniové zatížení na nosníky a žebra

|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -5,09 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -5,09 | 0 |

### strop nad 2NP: Liniové zatížení na nosníky a žebra

|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -4,67 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -4,67 | 0 |

### strop nad 1NP: Liniové zatížení na nosníky a žebra

|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -4,67 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -4,67 | 0 |

### zdivo: Liniové zatížení na nosníky a žebra

|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -16,20 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -16,20 | 0 |

### půda: Liniové zatížení na nosníky a žebra

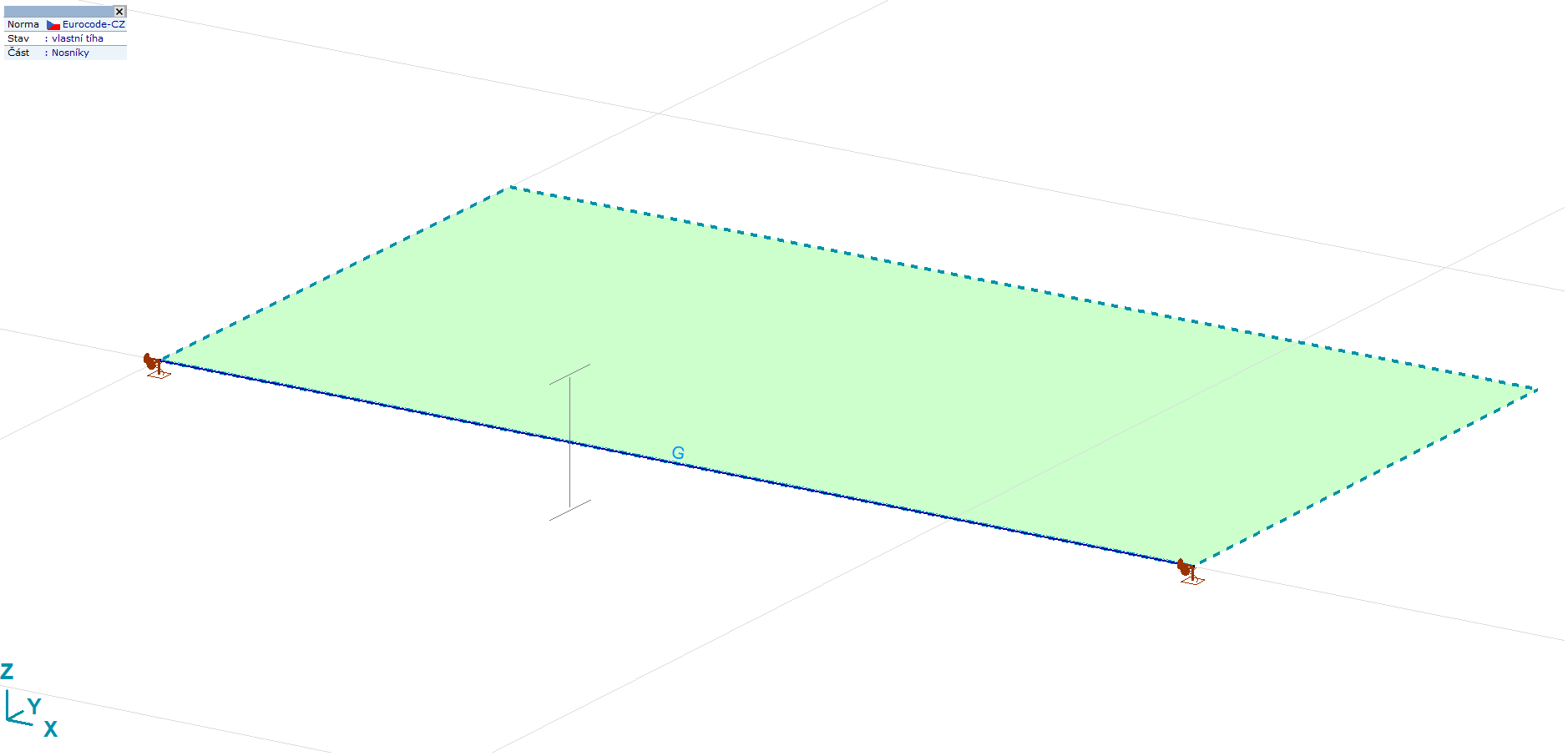
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -2,25 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -2,25 | 0 |

### škola: Liniové zatížení na nosníky a žebra

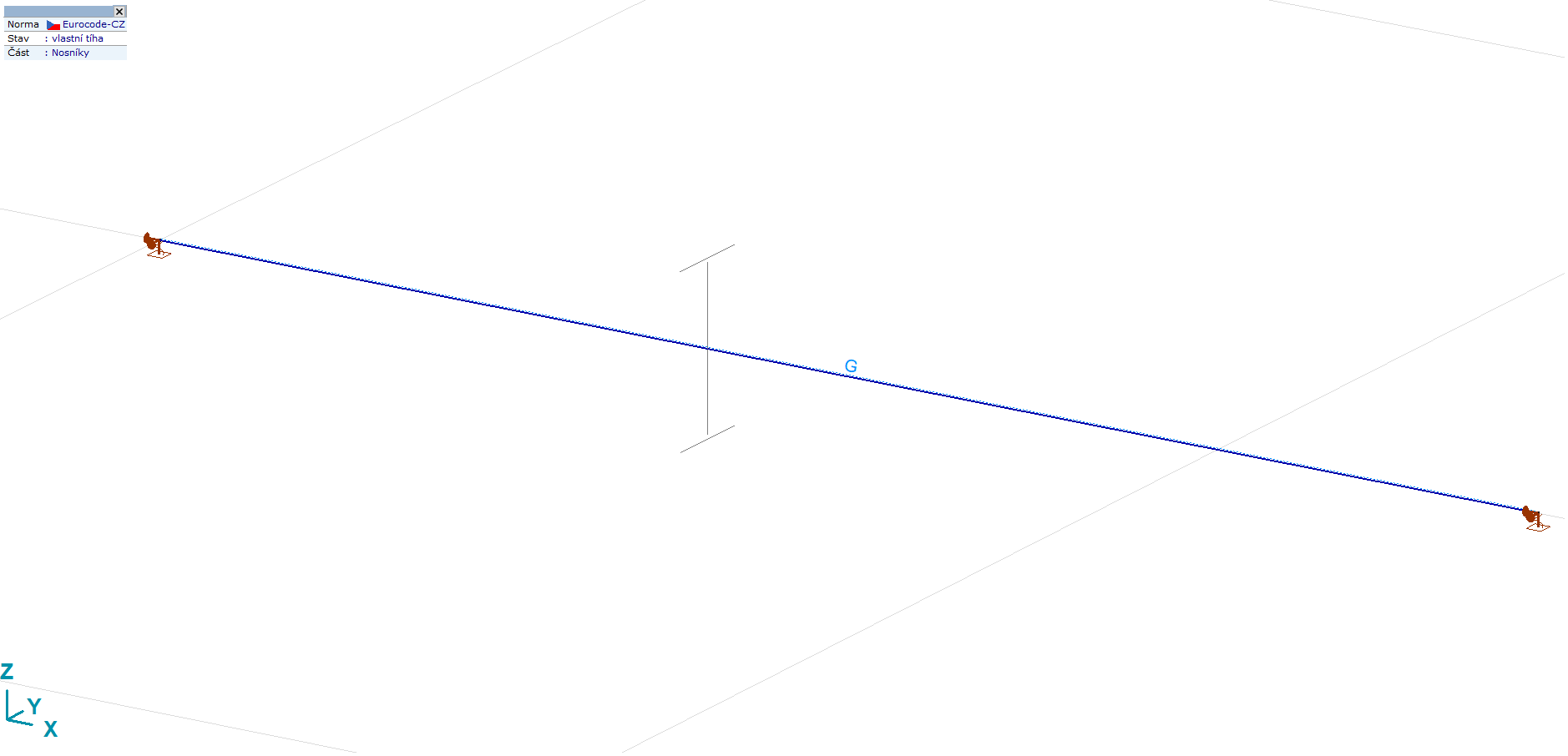
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -9,00 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -9,00 | 0 |

# Logické části

## Nosníky



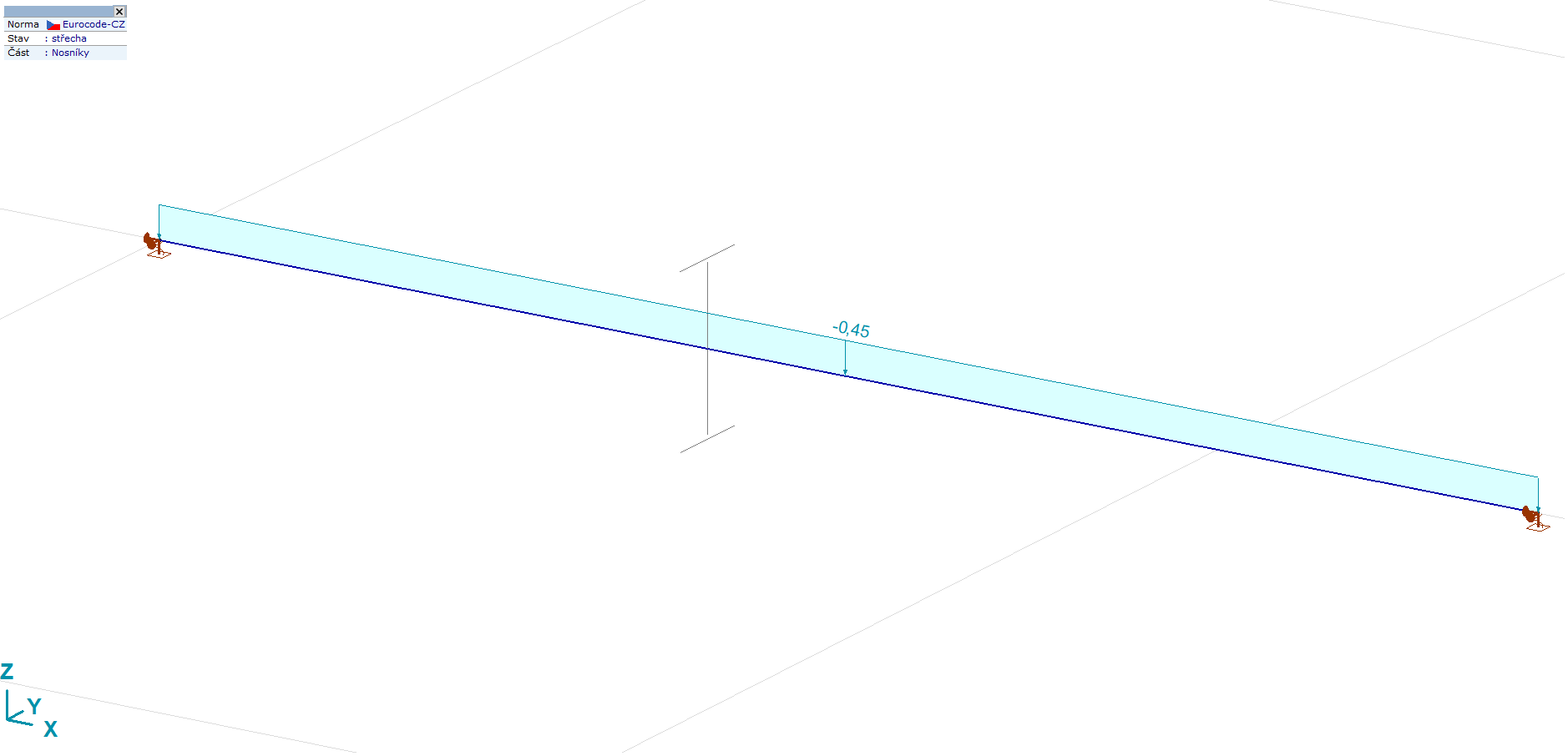
Dokument Nosníky



Dokument Nosníky, vlastní tíha

### vlastní tíha: Vlastní tíha nosníku

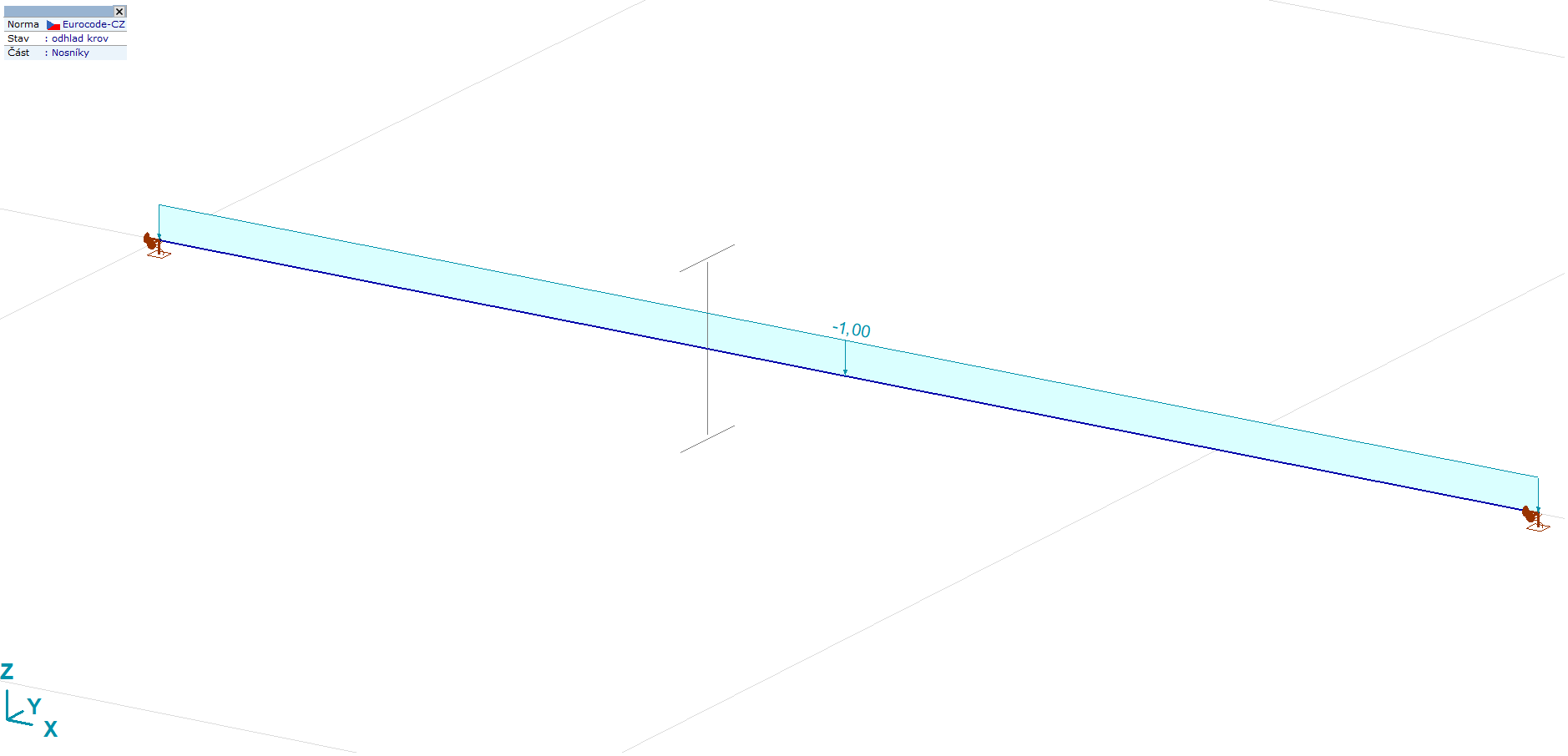
|  | **S [kg]** |
| --- | --- |
| 1 | 20,506 |
| **Celkem** | **20,506** |



Dokument Nosníky, střecha

### střecha: Liniové zatížení na nosníky a žebra [Nosníky / IPE 160]

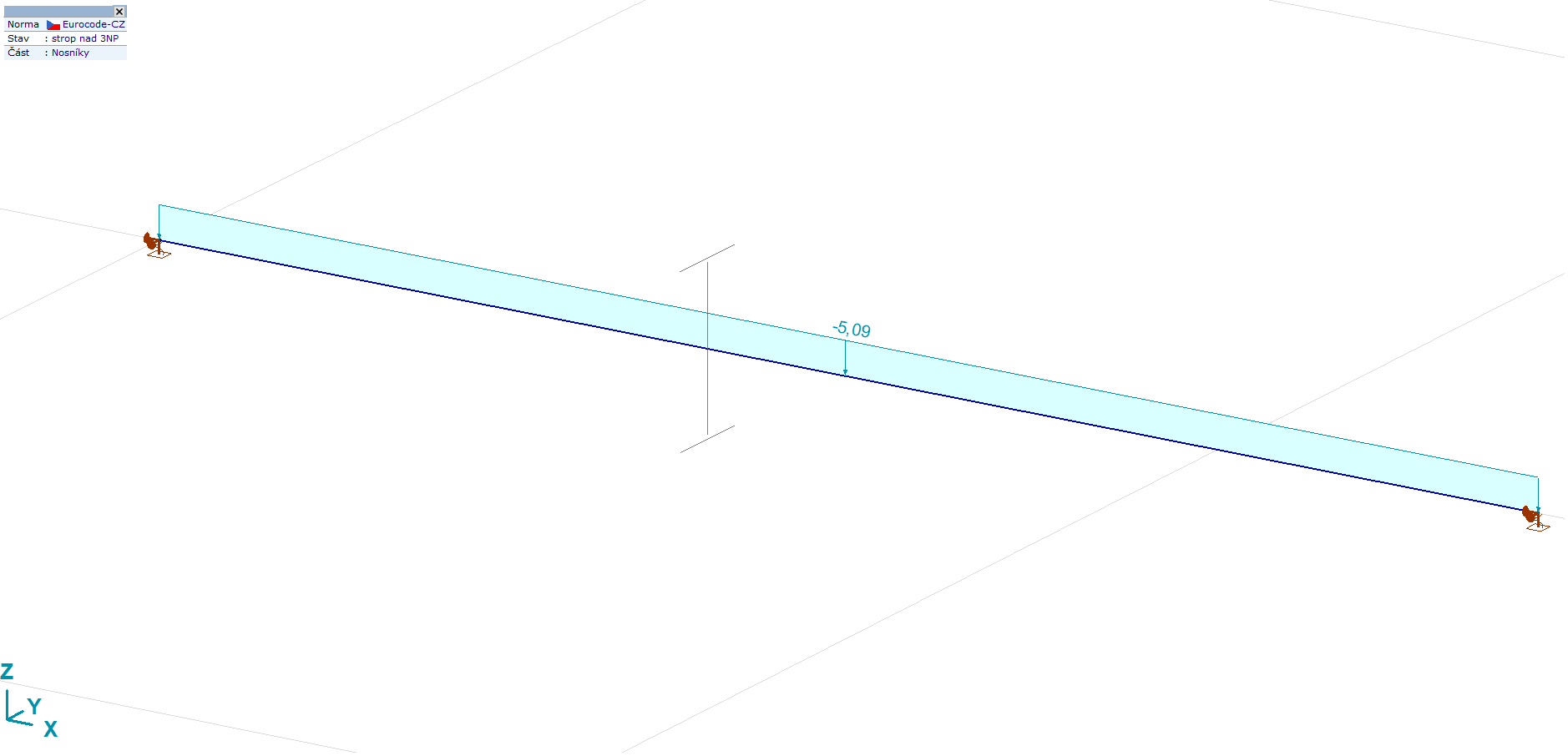
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -0,45 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -0,45 | 0 |



Dokument Nosníky, odhlad krov

### odhlad krov: Liniové zatížení na nosníky a žebra [Nosníky / IPE 160]

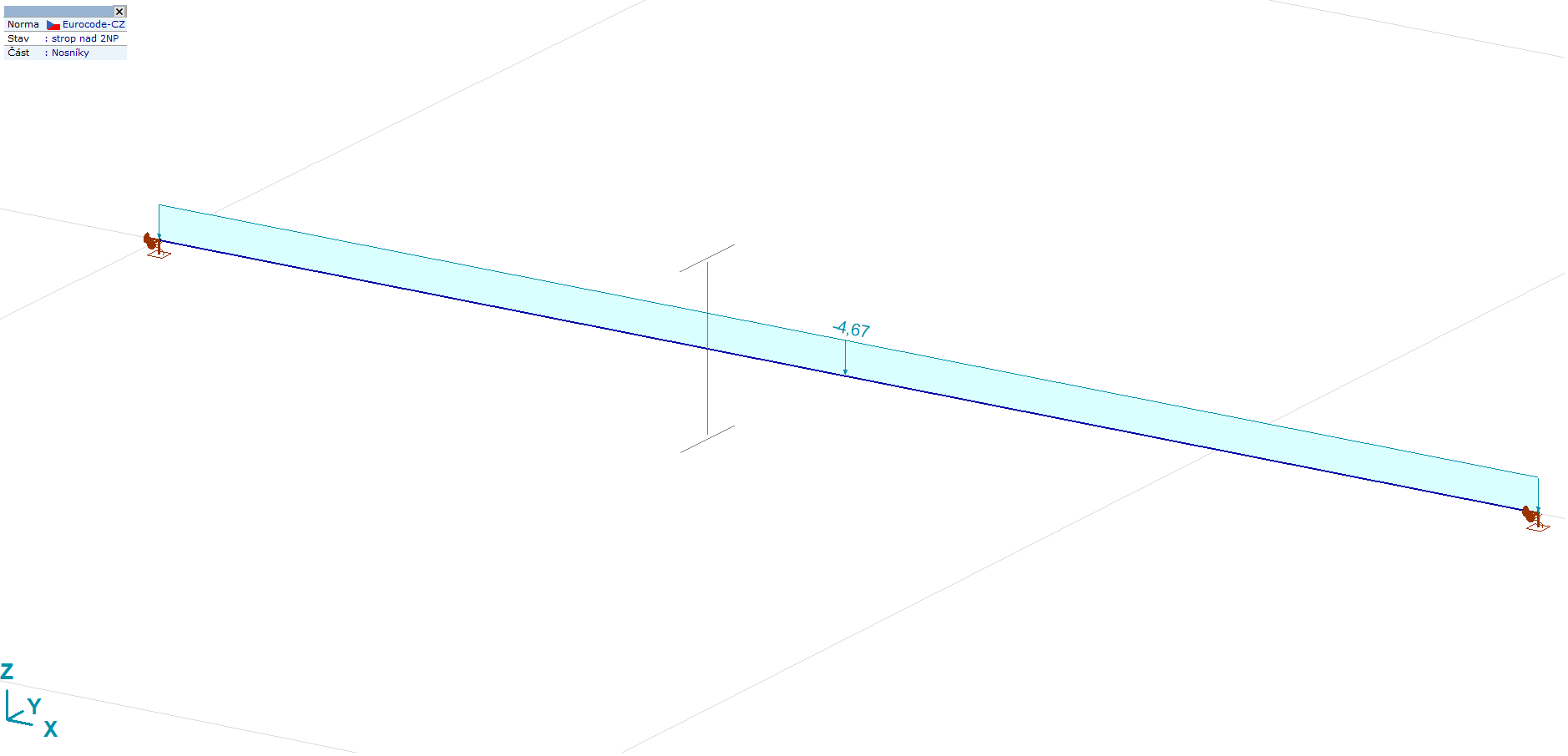
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -1,00 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -1,00 | 0 |



Dokument Nosníky, strop nad 3NP

### strop nad 3NP: Liniové zatížení na nosníky a žebra [Nosníky / IPE 160]

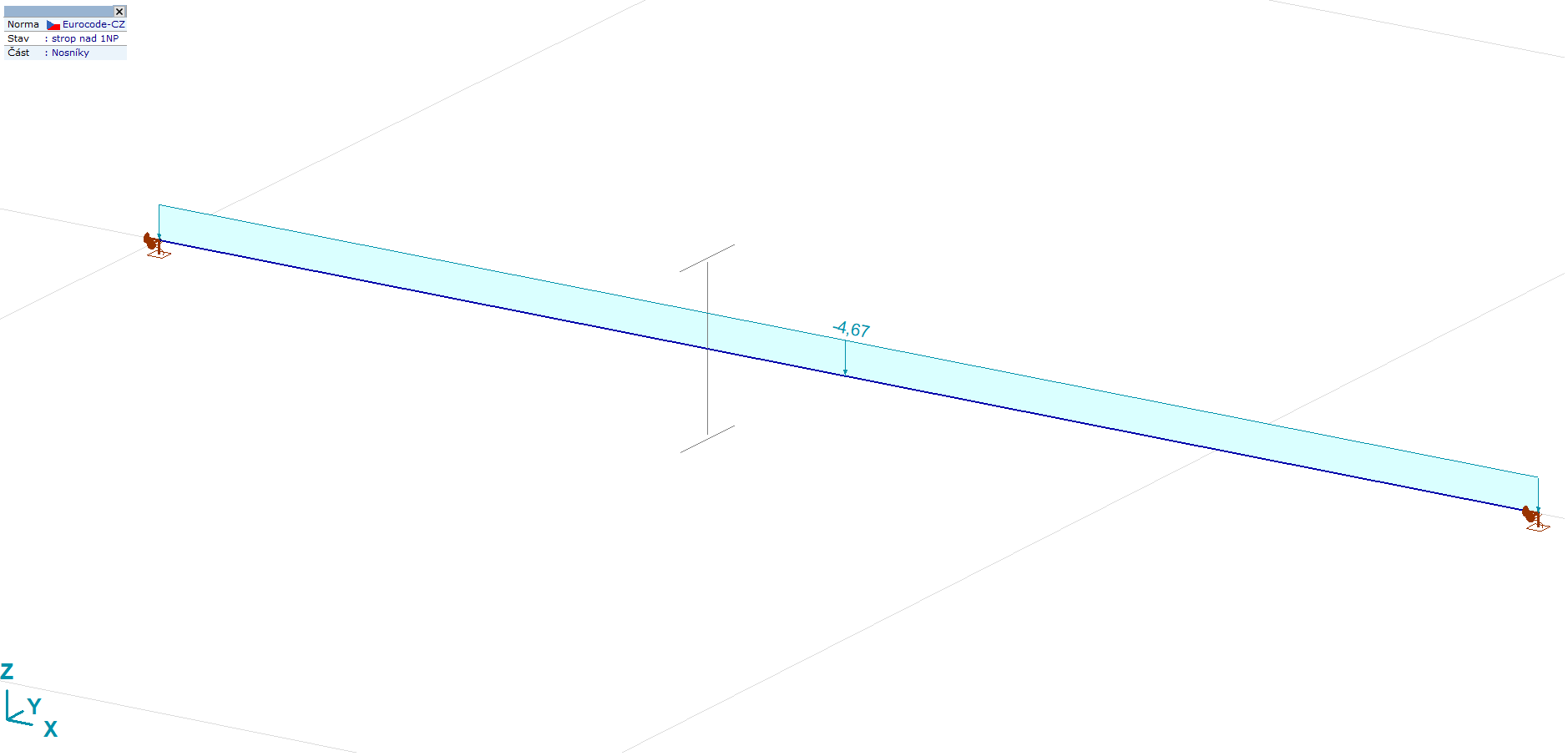
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -5,09 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -5,09 | 0 |



Dokument Nosníky, strop nad 2NP

### strop nad 2NP: Liniové zatížení na nosníky a žebra [Nosníky / IPE 160]

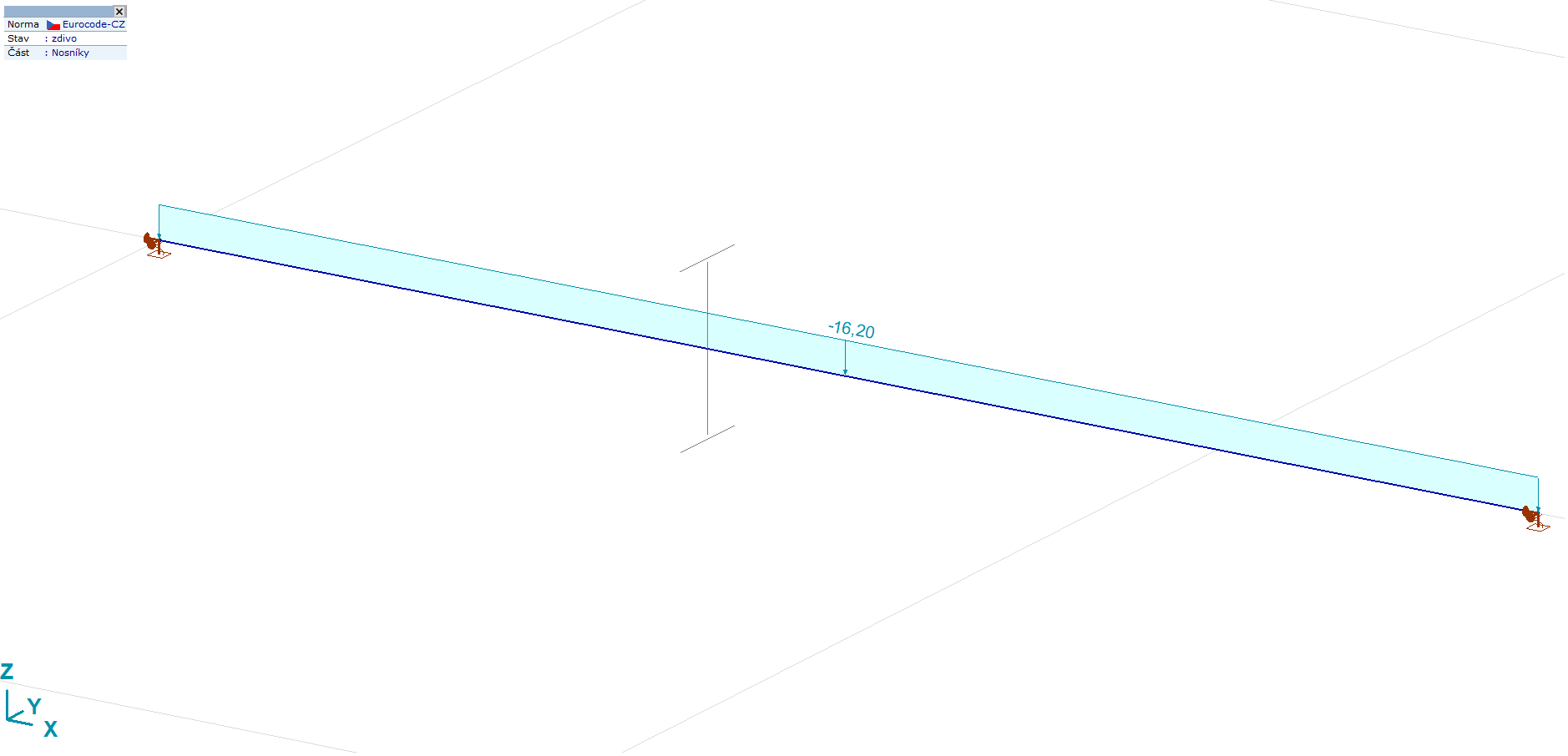
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -4,67 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -4,67 | 0 |



Dokument Nosníky, strop nad 1NP

### strop nad 1NP: Liniové zatížení na nosníky a žebra [Nosníky / IPE 160]

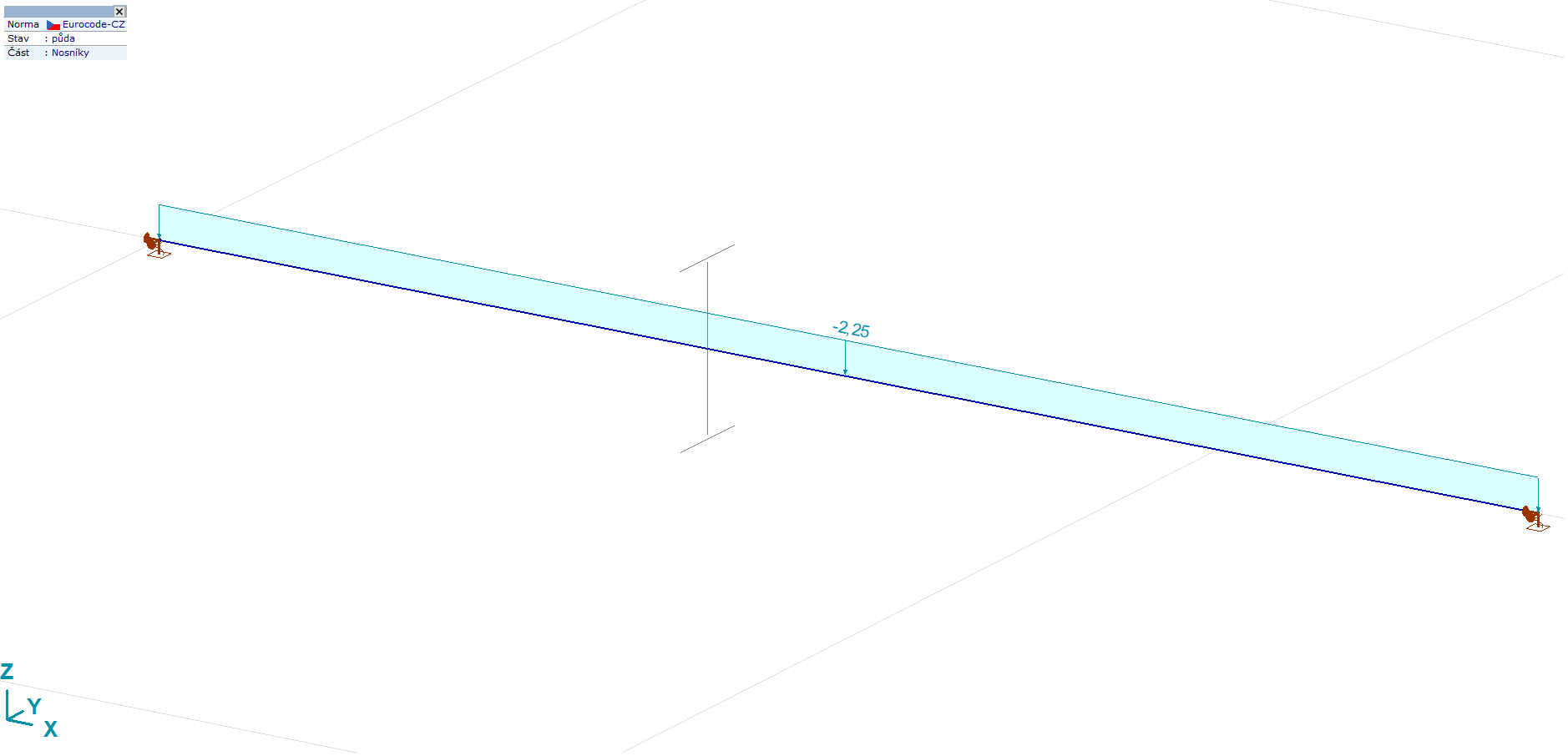
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -4,67 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -4,67 | 0 |



Dokument Nosníky, zdivo

### zdivo: Liniové zatížení na nosníky a žebra [Nosníky / IPE 160]

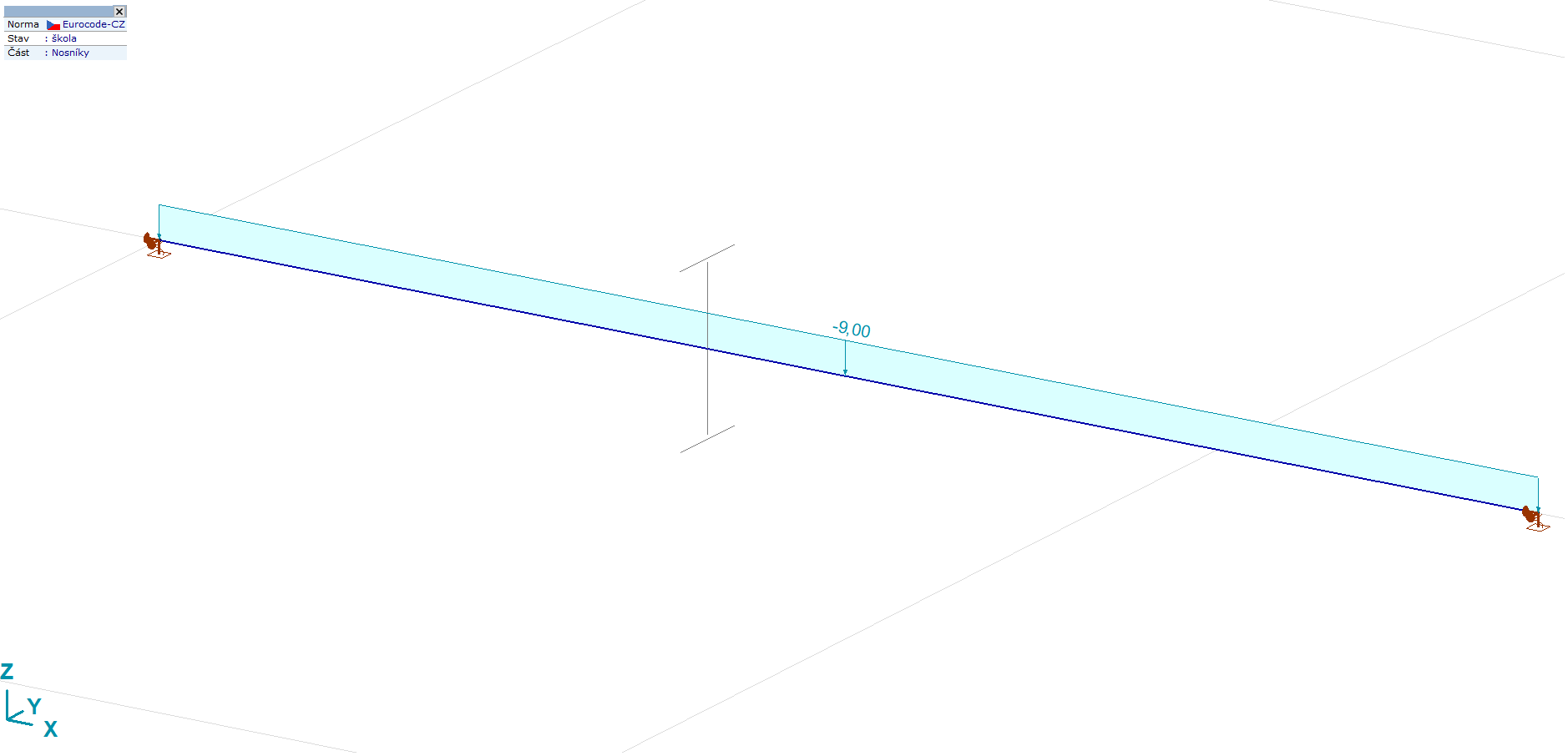
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -16,20 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -16,20 | 0 |



Dokument Nosníky, půda

### půda: Liniové zatížení na nosníky a žebra [Nosníky / IPE 160]

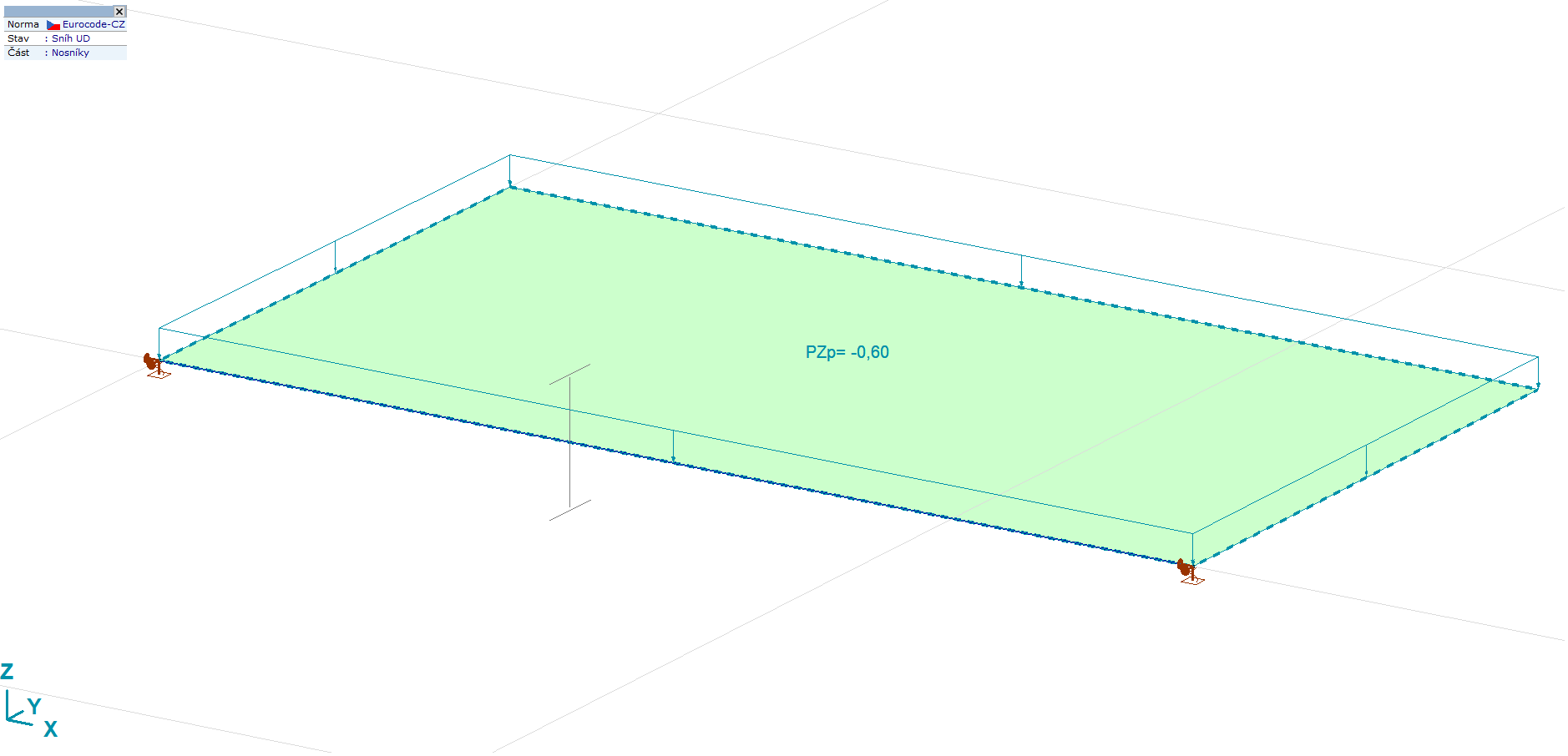
|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -2,25 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -2,25 | 0 |



Dokument Nosníky, škola

### škola: Liniové zatížení na nosníky a žebra [Nosníky / IPE 160]

|  | **Typ** | **Délka**  **[m]** | **a/d** | **Poz.** | **px**  **[kN/m]** | **py**  **[kN/m]** | **pz**  **[kN/m]** | **mtor**  **[kNm/m]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Nosník G ln. | 1,300 | a | 0 | 0 | 0 | -9,00 | 0 |
|  |  |  |  | 1,000 | 0 | 0 | -9,00 | 0 |



Dokument Nosníky, Sníh UD

### Lineární statická analýza

#### Posuny

Uzlové posunutí

Kritické Min, Max.

### Uzlové posunutí [Lineární,(MSP Charakteristická) Kritická, Nosníky / IPE 160]

| **C** | **min.**  **max.** | **eX**  **[mm]** | **eY**  **[mm]** | **eZ**  **[mm]** | **eR**  **[mm]** | **fX**  **[rad]** | **fY**  **[rad]** | **fZ**  **[rad]** | **fR**  **[rad]** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — |
| eX | min | **0** | 0 | 0 | 0 | 0 | 0,00162 | 0 | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
|  | max | **0** | 0 | 0 | 0 | 0 | 0,00162 | 0 | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| eY | min | 0 | **0** | 0 | 0 | 0 | 0,00162 | 0 | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
|  | max | 0 | **0** | 0 | 0 | 0 | 0,00162 | 0 | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| eZ | min | 0 | 0 | **0** | 0 | 0 | 0,00207 | 0 | 0,00207 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola​ ​ |
|  | max | 0 | 0 | **0** | 0 | 0 | 0,00162 | 0 | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| eR | min | 0 | 0 | 0 | **0** | 0 | 0,00162 | 0 | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
|  | max | 0 | 0 | 0 | **0** | 0 | 0,00208 | 0 | 0,00208 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
| fX | min | 0 | 0 | 0 | 0 | **0** | 0,00162 | 0 | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
|  | max | 0 | 0 | 0 | 0 | **0** | 0,00162 | 0 | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| fY | min | 0 | 0 | 0 | 0 | 0 | **-0,00208** | 0 | 0,00208 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
|  | max | 0 | 0 | 0 | 0 | 0 | **0,00208** | 0 | 0,00208 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
| fZ | min | 0 | 0 | 0 | 0 | 0 | 0,00162 | **0** | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
|  | max | 0 | 0 | 0 | 0 | 0 | 0,00162 | **0** | 0,00162 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| fR | min | 0 | 0 | 0 | 0 | 0 | 0,00162 | 0 | **0,00162** | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
|  | min | 0 | 0 | 0 | 0 | 0 | -0,00162 | 0 | **0,00162** | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
|  | max | 0 | 0 | 0 | 0 | 0 | 0,00208 | 0 | **0,00208** | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
|  | max | 0 | 0 | 0 | 0 | 0 | -0,00208 | 0 | **0,00208** | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |

Deformace na nosnících

Kritické Min, Max.

### Deformace na nosnících [Lineární,(MSP Charakteristická) Kritická, Nosníky / IPE 160]

| **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **ex**  **[mm]** | **ey**  **[mm]** | **ez**  **[mm]** | **eR**  **[mm]** | **fx**  **[rad]** | **fy**  **[rad]** | **fz**  **[rad]** | **fR**  **[rad]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | IPE 160 | ex | min | 0 | (1) | **0** | 0 | 0 | 0 | 0 | 0,00162 | 0 | 0,00162 |
| 1 | IPE 160 |  | max | 0 | (1) | **0** | 0 | 0 | 0 | 0 | 0,00162 | 0 | 0,00162 |
| 1 | IPE 160 | ey | min | 0 | (1) | 0 | **0** | 0 | 0 | 0 | 0,00162 | 0 | 0,00162 |
| 1 | IPE 160 |  | max | 1,300 | (2) | 0 | **0** | 0 | 0 | 0 | -0,00207 | 0 | 0,00207 |
| 1 | IPE 160 | ez | min | 0,650 |  | 0 | 0 | **-0,844** | 0,844 | 0 | 0 | 0 | 0 |
| 1 | IPE 160 |  | max | 0 | (1) | 0 | 0 | **0** | 0 | 0 | 0,00162 | 0 | 0,00162 |
| 1 | IPE 160 | eR | min | 0 | (1) | 0 | 0 | 0 | **0** | 0 | 0,00162 | 0 | 0,00162 |
| 1 | IPE 160 |  | max | 0,650 |  | 0 | 0 | -0,844 | **0,844** | 0 | 0 | 0 | 0 |
| 1 | IPE 160 | fx | min | 0 | (1) | 0 | 0 | 0 | 0 | **0** | 0,00162 | 0 | 0,00162 |
| 1 | IPE 160 |  | max | 0 | (1) | 0 | 0 | 0 | 0 | **0** | 0,00162 | 0 | 0,00162 |
| 1 | IPE 160 | fy | min | 1,300 | (2) | 0 | 0 | 0 | 0 | 0 | **-0,00208** | 0 | 0,00208 |
| 1 | IPE 160 |  | max | 0 | (1) | 0 | 0 | 0 | 0 | 0 | **0,00208** | 0 | 0,00208 |
| 1 | IPE 160 | fz | min | 0 | (1) | 0 | 0 | 0 | 0 | 0 | 0,00162 | **0** | 0,00162 |
| 1 | IPE 160 |  | max | 1,300 | (2) | 0 | 0 | 0 | 0 | 0 | -0,00207 | **0** | 0,00207 |
| 1 | IPE 160 | fR | min | 0,650 |  | 0 | 0 | -0,844 | 0,844 | 0 | 0 | 0 | **0** |
| 1 | IPE 160 |  | max | 0 | (1) | 0 | 0 | 0 | 0 | 0 | 0,00208 | 0 | **0,00208** |

| **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — |
| 1 | IPE 160 | ex | min | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| 1 | IPE 160 | ey | min | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| 1 | IPE 160 |  | max | 1,300 | (2) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola​ ​ |
| 1 | IPE 160 | ez | min | 0,650 |  | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| 1 | IPE 160 | eR | min | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| 1 | IPE 160 |  | max | 0,650 |  | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
| 1 | IPE 160 | fx | min | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| 1 | IPE 160 | fy | min | 1,300 | (2) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
| 1 | IPE 160 | fz | min | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ |
| 1 | IPE 160 |  | max | 1,300 | (2) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola​ ​ |
| 1 | IPE 160 | fR | min | 0,650 |  | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo] ​ ​škola ​ ​(0,5\*Sníh UD)​ ​ |

#### Vnitřní síly

Vnitřní síly na nosníku

Kritické Min, Max.

### Vnitřní síly na nosníku [Lineární,(Vše MSÚ (a, b)) Kritická, Nosníky / IPE 160]

| **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **Nx**  **[kN]** | **Vy**  **[kN]** | **Vz**  **[kN]** | **Tx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | IPE 160 | Nx | min | 0 | (1) | **0** | 0 | -28,282 | 0 | 0 | 0 |
| 1 | IPE 160 |  | max | 0 | (1) | **0** | 0 | -28,282 | 0 | 0 | 0 |
| 1 | IPE 160 | Vy | min | 0 | (1) | 0 | **0** | -28,282 | 0 | 0 | 0 |
| 1 | IPE 160 |  | max | 0 | (1) | 0 | **0** | -28,282 | 0 | 0 | 0 |
| 1 | IPE 160 | Vz | min | 0 | (1) | 0 | 0 | **-34,629** | 0 | 0 | 0 |
| 1 | IPE 160 |  | max | 1,300 | (2) | 0 | 0 | **34,629** | 0 | 0 | 0 |
| 1 | IPE 160 | Tx | min | 0 | (1) | 0 | 0 | -28,282 | **0** | 0 | 0 |
| 1 | IPE 160 |  | max | 0 | (1) | 0 | 0 | -28,282 | **0** | 0 | 0 |
| 1 | IPE 160 | My | min | 0,650 |  | 0 | 0 | 0 | 0 | **-11,254** | 0 |
| 1 | IPE 160 |  | max | 1,300 | (2) | 0 | 0 | 34,424 | 0 | **0** | 0 |
| 1 | IPE 160 | Mz | min | 0 | (1) | 0 | 0 | -28,282 | 0 | 0 | **0** |
| 1 | IPE 160 |  | max | 0 | (1) | 0 | 0 | -28,282 | 0 | 0 | **0** |

| **Skoř.** | **Jméno**  **průřezu** | **C** | **min.**  **max.** | **Poz.**  **[m]** | **Uzel** | **Kritická kombinace** |
| --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — |
| 1 | IPE 160 | Nx | min | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ |
| 1 | IPE 160 | Vy | min | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ |
| 1 | IPE 160 | Vz | min | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo] ​ ​1,5\*0,7\*škola ​ ​(1,5\*0,5\*Sníh UD)​ ​ |
| 1 | IPE 160 |  | max | 1,300 | (2) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo] ​ ​1,5\*0,7\*škola ​ ​(1,5\*0,5\*Sníh UD)​ ​ |
| 1 | IPE 160 | Tx | min | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ |
| 1 | IPE 160 | My | min | 0,650 |  | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo] ​ ​1,5\*0,7\*škola ​ ​(1,5\*0,5\*Sníh UD)​ ​ |
| 1 | IPE 160 |  | max | 1,300 | (2) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo] ​ ​1,5\*0,7\*škola​ ​ |
| 1 | IPE 160 | Mz | min | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ |
| 1 | IPE 160 |  | max | 0 | (1) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ |

Vnitřní síly v uzlové podpoře

Kritické Min, Max.

### Vnitřní síly v uzlové podpoře [Lineární,(Vše MSÚ (a, b)) Kritická, Nosníky / IPE 160]

|  | **Uzel** | **X [m]** | **Y [m]** | **Z [m]** | **Typ** | **C** | **min.**  **max.** | **Rx**  **[kN]** | **Ry**  **[kN]** | **Rz**  **[kN]** | **Rr**  **[kN]** | **Rzz**  **[kNm]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 | 1 | 2,000 | 3,000 | 0 | Glob. | Rx | min | **0** | 0 | -28,282 | 28,282 | 0 |
| 1 | 1 | 2,000 | 3,000 | 0 | Glob. |  | max | **0** | 0 | -28,282 | 28,282 | 0 |
| 1 | 1 | 2,000 | 3,000 | 0 | Glob. | Ry | min | 0 | **0** | -28,282 | 28,282 | 0 |
| 1 | 1 | 2,000 | 3,000 | 0 | Glob. |  | max | 0 | **0** | -28,282 | 28,282 | 0 |
| 1 | 1 | 2,000 | 3,000 | 0 | Glob. | Rz | min | 0 | 0 | **-34,629** | 34,629 | 0 |
| 2 | 2 | 3,300 | 3,000 | 0 | Glob. |  | min | 0 | 0 | **-34,629** | 34,629 | 0 |
| 1 | 1 | 2,000 | 3,000 | 0 | Glob. |  | max | 0 | 0 | **-20,949** | 20,949 | 0 |
| 2 | 2 | 3,300 | 3,000 | 0 | Glob. |  | max | 0 | 0 | **-20,949** | 20,949 | 0 |
| 1 | 1 | 2,000 | 3,000 | 0 | Glob. | Rzz | min | 0 | 0 | -28,282 | 28,282 | **0** |
| 1 | 1 | 2,000 | 3,000 | 0 | Glob. |  | max | 0 | 0 | -28,282 | 28,282 | **0** |
|  | **Kritická kombinace** | | | | | | | | | | | | |
| — | — | | | | | | | | | | | | |
| 1 | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ | | | | | | | | | | | | |
| 1 | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ | | | | | | | | | | | | |
| 1 | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ | | | | | | | | | | | | |
| 1 | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ | | | | | | | | | | | | |
| 1 | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo] ​ ​1,5\*0,7\*škola ​ ​(1,5\*0,5\*Sníh UD)​ ​ | | | | | | | | | | | | |
| 2 | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo] ​ ​1,5\*0,7\*škola ​ ​(1,5\*0,5\*Sníh UD)​ ​ | | | | | | | | | | | | |
| 1 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ | | | | | | | | | | | | |
| 2 | ​ ​[vlastní tíha​+střecha​+odhlad krov​+strop nad 3NP​+strop nad 2NP​+strop nad 1NP​+zdivo]​ ​ | | | | | | | | | | | | |
| 1 | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ | | | | | | | | | | | | |
| 1 | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo]​ ​ | | | | | | | | | | | | |

#### Posudek oceli

Jednotkový posudek konstrukčního prvku (Eurocode-CZ)

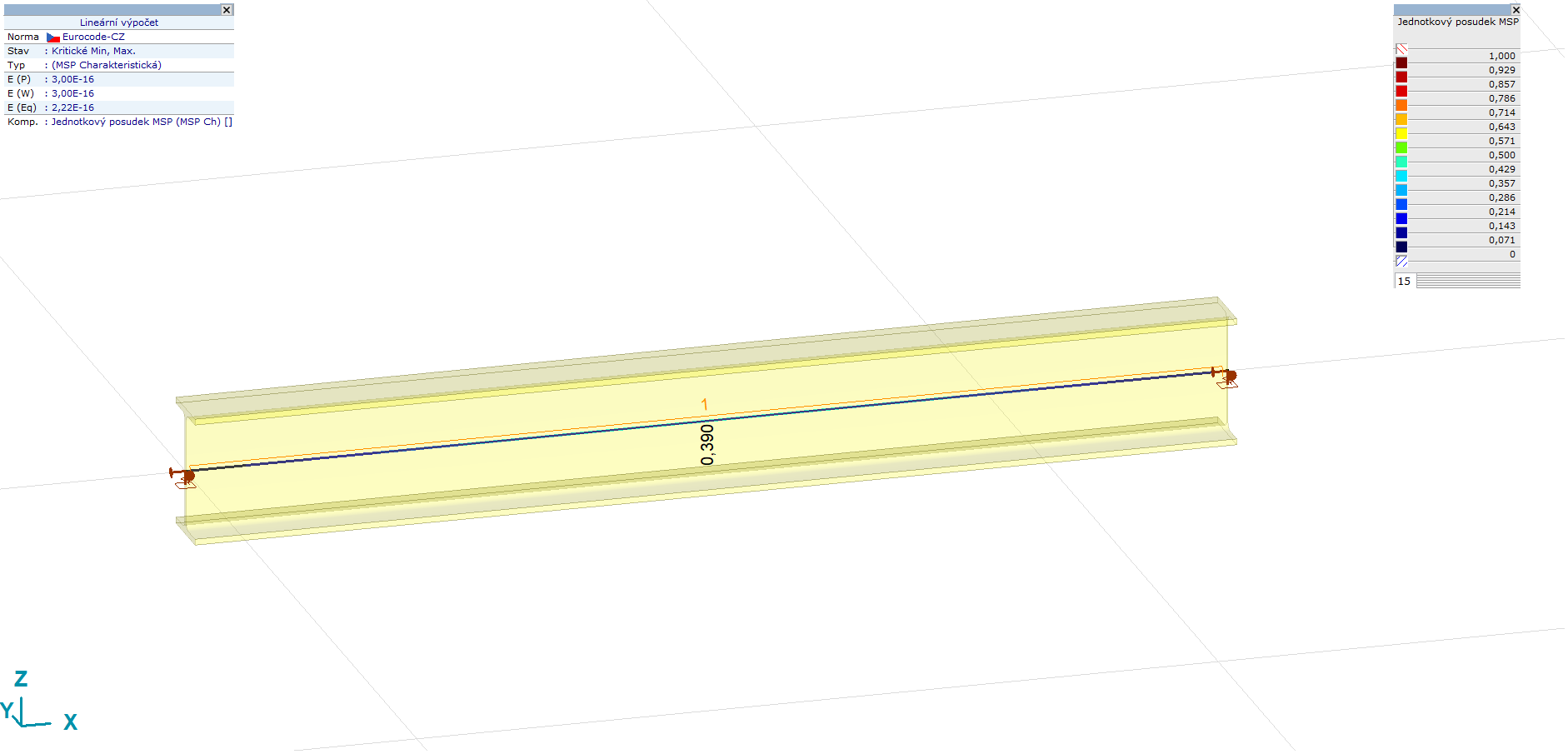
Kritické Min, Max.

### Jednotkový posudek konstrukčního prvku (Eurocode-CZ) [Lineární,(Vše MSÚ (a, b)) Kritická, Nosníky / IPE 160]

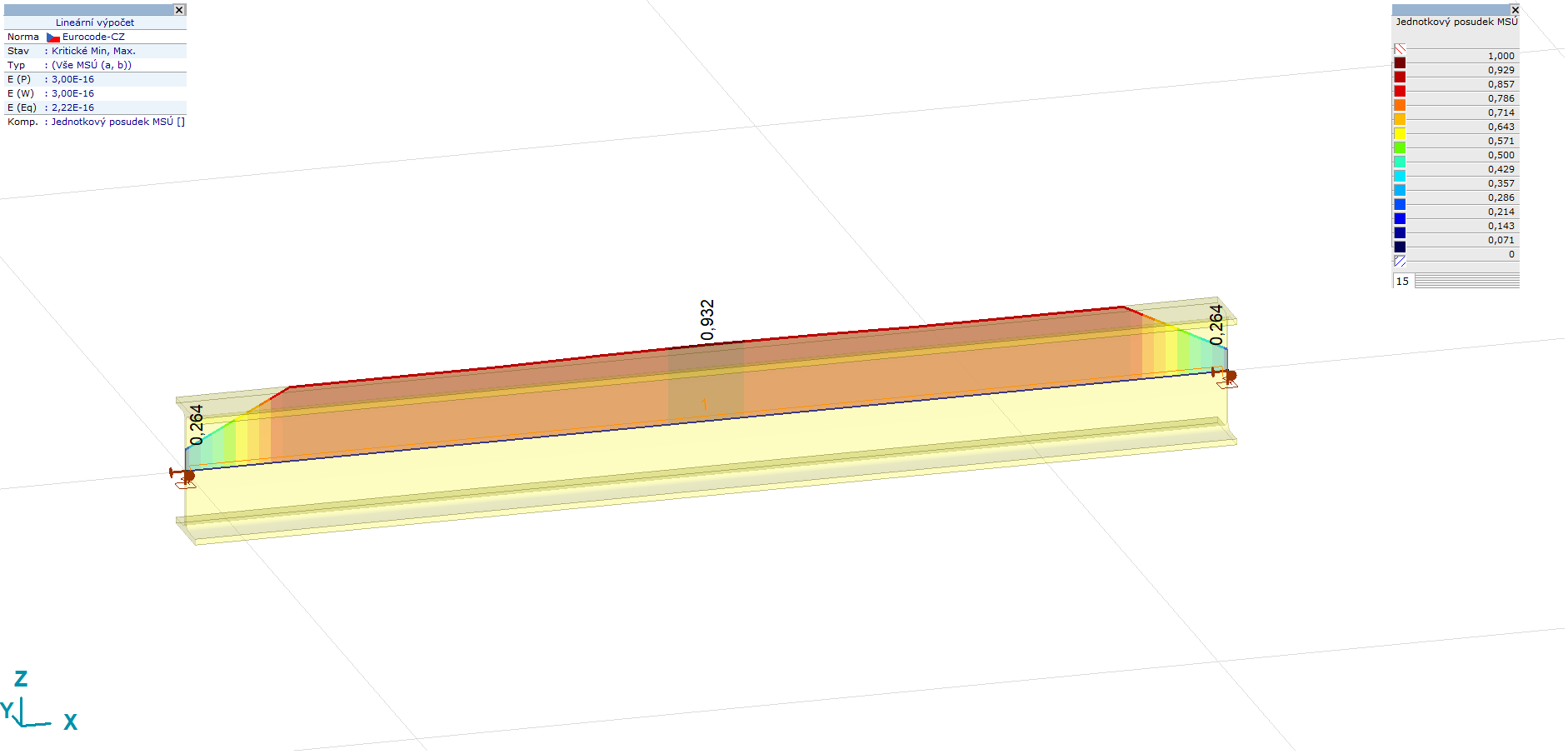
| **Prvek** | **Typ** | **Materiál** | **Průřez** | **Max. Poz.**  **[m]** | **Výpočet** | **Max.** |  | **Nx**  **[kN]** | **Vy**  **[kN]** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1(1–2) | (Nosník) | S 235 | IPE 160 | 0,650 | N-M-Klop. | 0,932 |  | 0 | 0 |
| — | — | — | — | — | — | — | — | — | — |
| 1(1–2) | (Nosník) | S 235 | IPE 160 | 0,650 | N-M-Klop. | 0,932 |  | 0 | 0 |

| **Prvek** | **Vz**  **[kN]** | **Tx**  **[kNm]** | **My**  **[kNm]** | **Mz**  **[kNm]** | **Ky** | **Kz** | **Kw** | **Za** | **C1** | **C2** | **C3** | **Křivka**  **třída N** | **cN** | **Křivka**  **třída LT** | **cLT** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1(1–2) | 0 | 0 | -11,254 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,415 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1(1–2) | 0 | 0 | -11,254 | 0 | 1,000 | 1,000 | 1,000 | 0,500 | — | — | — | a0 | 1,000 | b | 0,415 |

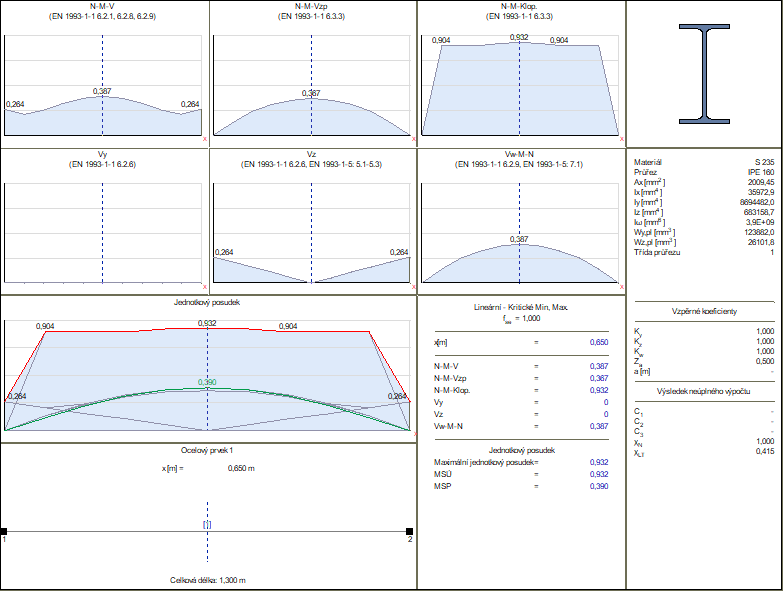
| **Prvek** | **Kritická kombinace** |
| --- | --- |
| 1(1–2) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo] ​ ​1,5\*0,7\*škola ​ ​(1,5\*0,5\*Sníh UD)​ ​ |
| — | — |
| 1(1–2) | ​ ​[1,35\*vlastní tíha​+1,35\*střecha​+1,35\*odhlad krov​+1,35\*strop nad 3NP​+1,35\*strop nad 2NP​+1,35\*strop nad 1NP​+1,35\*zdivo] ​ ​1,5\*0,7\*škola ​ ​(1,5\*0,5\*Sníh UD)​ ​ |



[StI], Lineární,(Auto) Kritická, Jednotkový posudek MSP, Vyplněný diagram



[StI], Lineární,(Auto) Kritická, Jednotkový posudek MSÚ, Vyplněný diagram



posouzení překladu

***ZÁVĚR***

Veškeré posuzované konstrukce vyhovují při splnění vstupních podmínek na oba mezní stavy. Jako překlad pro prostupy nosnou konstrukcí budou osazeny 4ks profilu IPE160. Statický výpočet obsahuje 32 stran a je vyhotoven v šesti stejnopisech.

V Rychnově nad Kněžnou 16. 4. 2021

Ing J. Viesner