Energijska učinkovitost stavb

← Nazaj

Po Pravilniku o učinkoviti rabi energije v stavbah (Uradni list RS, št. 70/22 z dne 20. 5. 2022) in Pravilniku o spremembah Pravilnika o učinkoviti rabi energije v stavbah (Uradni list RS, št. 161/22 z dne 23. 12. 2022).

Investitor:	Janez Novak Mestna cesta 12, 1000 Ljubljana
Naziv projekta:	**Testni Projekt**
Izdelovalec elaborata:	Franc Pavlin, udia, ZAPS 1122
Vodja projektiranja:	Franc Pavlin, udia, ZAPS 1122
Številka elaborata:	2023-01
Datum elaborata:	april 2023

Podatki o projektu "Testni Projekt"

Analiza GF Izkaz GF Analiza SNES Izkaz sNES

Analiza ovoja cone "Cona1" Analiza cone "Cona1"

TSS "TC" TSS "Prezracevanje" TSS "Razsvetljava"

Naziv projekta		Testni Projekt
Ulica, kraj		Mestna cesta 12
Katastrska občina		Ljubljana
Parcele		123/4
GK koordinate kraja	GKX	116215
	GKY	469925

Analiza Projekta "Testni Projekt"

← Nazaj

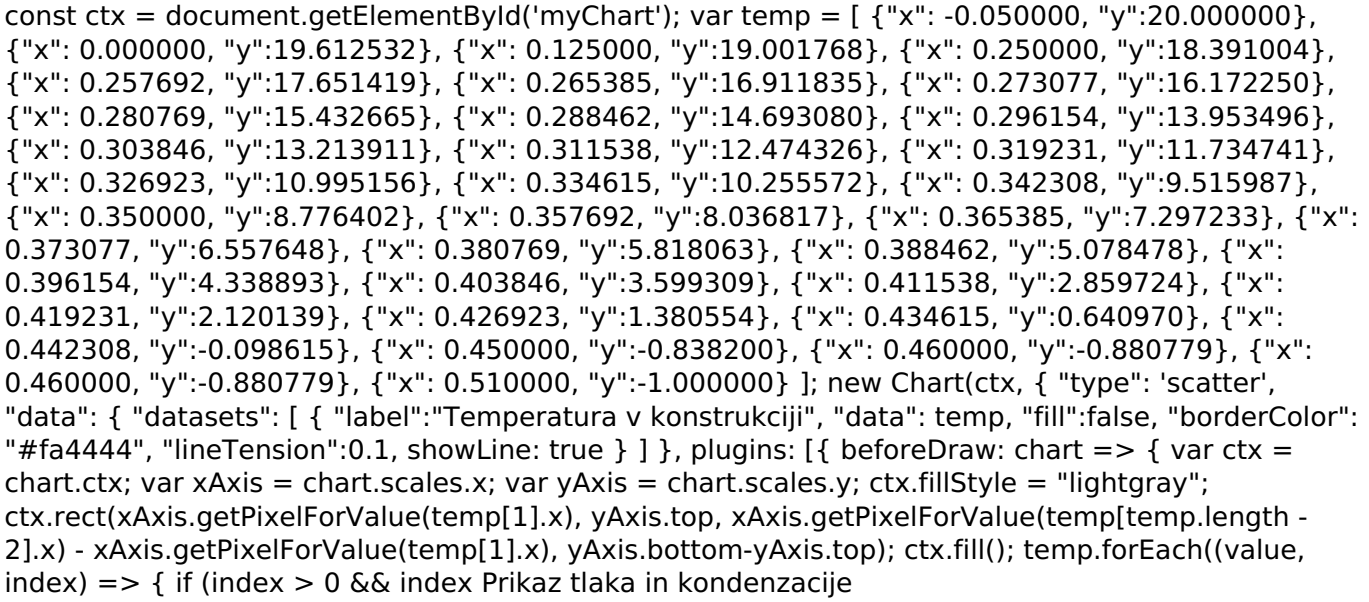
Bruto ogrevana prostornina stavbe	V_e	672,0	m3
Površina toplotnega ovoja stavbe	A_{ovoj}	680,0	m²
Kondicionirana površina stavbe	A_{use}	160,0	m²
Transp. površina v toplotnem ovoju stavbe	A_{trans}	29,19	m²
Faktor oblike stavbe	f_0	1,012	m^{-1}
Razmerje transp./celotne površine ovoja	z	0,043	-
Spec. koef. transm. topl. izgub	H'_{tr}	0,212	W/m²K
$X_{H'tr} \times H'_{tr,dov}$		0,326	W/m²K
$X_{H'tr}$		1,000	W/m²K
Potrebna toplota za ogrevanje stavbe	$Q_{H,nd,an}$	5114	kWh/an
Potrebna toplota za hlajenje stavbe	$Q_{C,nd,an}$	57	kWh/an
Potrebna toplota za pripravo TSV	$Q_{W,nd,an}$	1345	kWh/an
Potrebna energija za vlaženje zraka	$Q_{HU,nd,an}$	0	kWh/an
Potrebna energija za razvlaževanje zraka	$Q_{DHU,nd,an}$	0	kWh/an
Dovedena energija za razsvetljavo	$E_{L,del,an}$	1238	kWh/an
Specifična potrebna toplota za ogrevanje	$Q'_{H,nd,an}$	32,0	kWh/m²an

Analiza netransparentne konstrukcije

Naziv:	Fasadni Zid				
Tip:	Zunanje stene				
U=	0.142 W/m2K	U_{max}=	0.180 W/m2K	Ustreza	
f_{Rsi}=	0.982	$f_{Rsi,min}$=	0.557	Ustreza	

	d [m]	λ [W/mK]	ρ [kg/m^3]	c_p [J/kg K]	μ [-]	R [m^{2}K/W]	s_d [m]	
Zid	0,250	0,610	1400	920		6,0	0,410	1,500
EPS Grafit	0,200	0,031	15	1260		25,0	6,452	5,000
Fasada	0,010	0,700	1850	1050		15,0	0,014	0,150

Prikaz temperature v konstrukciji



Prikaz tlaka in kondenzacije

	d [cm]	λ [W/mK]	R [m^{2}K/W]	s_d [m]	T [°C]	p_{dej} [Pa]	p_{nas} [Pa]	g_c [g/m^2 m]	M_a [g/m^2]
Prostor					20	1028	2337		
Notr. površina					19.6	1028	2281		
Zid.1	12.5	0.61	0.205	0.75	19	964.3	2196.4		
Zid.2	12.5	0.61	0.205	0.75	18.4	900.3	2114.1		
EPS Grafit.1	0.8	0.031	0.248	0.1923	17.7	883.9	2018.1		
EPS Grafit.2	0.8	0.031	0.248	0.1923	16.9	867.5	1925.9		
EPS Grafit.3	0.8	0.031	0.248	0.1923	16.2	851.1	1837.4		
EPS Grafit.4	0.8	0.031	0.248	0.1923	15.4	834.6	1752.5		
EPS Grafit.5	0.8	0.031	0.248	0.1923	14.7	818.2	1671		
EPS Grafit.6	0.8	0.031	0.248	0.1923	14	801.8	1592.9		
EPS Grafit.7	0.8	0.031	0.248	0.1923	13.2	785.4	1518		
EPS Grafit.8	0.8	0.031	0.248	0.1923	12.5	769	1446.3		
EPS Grafit.9	0.8	0.031	0.248	0.1923	11.7	752.6	1377.5		
EPS Grafit.10	0.8	0.031	0.248	0.1923	11	736.2	1311.6		
EPS Grafit.11	0.8	0.031	0.248	0.1923	10.3	719.8	1248.5		

	d [cm]	λ [W/mK]	R [m^2K/W]	s_d [m]	T [°C]	p_{dej} [Pa]	p_{nas} [Pa]	g_c [g/m^2 m]	M_a [g/m^2]
EPS Grafit.12	0.8	0.031	0.248	0.1923	9.5	703.4	1188.1		
EPS Grafit.13	0.8	0.031	0.248	0.1923	8.8	687	1130.2		
EPS Grafit.14	0.8	0.031	0.248	0.1923	8	670.6	1074.9		
EPS Grafit.15	0.8	0.031	0.248	0.1923	7.3	654.2	1022		
EPS Grafit.16	0.8	0.031	0.248	0.1923	6.6	637.8	971.3		
EPS Grafit.17	0.8	0.031	0.248	0.1923	5.8	621.3	922.9		
EPS Grafit.18	0.8	0.031	0.248	0.1923	5.1	604.9	876.7		
EPS Grafit.19	0.8	0.031	0.248	0.1923	4.3	588.5	832.4		
EPS Grafit.20	0.8	0.031	0.248	0.1923	3.6	572.1	790.2		
EPS Grafit.21	0.8	0.031	0.248	0.1923	2.9	555.7	749.9		
EPS Grafit.22	0.8	0.031	0.248	0.1923	2.1	539.3	711.4		
EPS Grafit.23	0.8	0.031	0.248	0.1923	1.4	522.9	674.6		
EPS Grafit.24	0.8	0.031	0.248	0.1923	0.6	506.5	639.6		
EPS Grafit.25	0.8	0.031	0.248	0.1923	-0.1	490.1	605.6		
EPS Grafit.26	0.8	0.031	0.248	0.1923	-0.8	473.7	569.6		
Fasada	1	0.7	0.014	0.15	-0.9	460.9	567.6		
Zun. površina					-0.9	461	568		
Okolica					-1	461	562		

const ctx2 = document.getElementById('myChart2'); // var nasicenTlak = [{"x": -0.332500, "y":2336.951144}, {"x": 0.000000, "y":2281.485971}, {"x": 0.750000, "y":2196.393459}, {"x": 1.500000, "y":2114.090711}, {"x": 1.692308, "y":2018.051830}, {"x": 1.884615, "y":1925.854747}, {"x": 2.076923, "y":1837.368328}, {"x": 2.269231, "y":1752.465063}, {"x": 2.461538, "y":1671.020984}, {"x": 2.653846, "y":1592.915602}, {"x": 2.846154, "y":1518.031831}, {"x": 3.038462, "y":1446.255919}, {"x": 3.230769, "y":1377.477383}, {"x": 3.423077, "y":1311.588933}, {"x": 3.615385, "y":1248.486412}, {"x": 3.807692, "y":1188.068722}, {"x": 4.000000, "y":1130.237764}, {"x": 4.192308, "y":1074.898369}, {"x": 4.384615, "y":1021.958233}, {"x": 4.576923, "y":971.327853}, {"x": 4.769231, "y":922.920467}, {"x": 4.961538, "y":876.651987}, {"x": 5.153846, "y":832.440942}, {"x": 5.346154, "y":790.208413}, {"x": 5.538462, "y":749.877974}, {"x": 5.730769, "y":711.375636}, {"x": 5.923077, "y":674.629784}, {"x": 6.115385, "y":639.571122}, {"x": 6.307692, "y":605.557910}, {"x": 6.500000, "y":569.636730}, {"x": 6.650000, "y":567.628902}, {"x": 6.650000, "y":567.628902}, {"x": 6.650000, "y":562.041157},]; // var dejanskiTlak = [{"x": 0, "y": 1028.258503273}, {"x": 6.65, "y": 460.87374857031}]; // var dejanskiTlakTocke = [{"x": 0.000000, "y":1028.258503}, {"x": 0.750000, "y":964.267741}, {"x": 1.500000, "y":900.276980}, {"x": 1.692308, "y":883.869092}, {"x": 1.884615, "y":867.461204}, {"x": 2.076923, "y":851.053317}, {"x": 2.269231, "y":834.645429}, {"x": 2.461538, "y":818.237541}, {"x": 2.653846, "y":801.829654}, {"x": 2.846154, "y":785.421766}, {"x": 3.038462, "y":769.013879}, {"x": 3.230769, "y":752.605991}, {"x": 3.423077, "y":736.198103}, {"x": 3.615385, "y":719.790216}, {"x": 3.807692, "y":703.382328}, {"x": 4.000000, "y":686.974440}, {"x": 4.192308, "y":670.566553}, {"x": 4.384615, "y":654.158665}, {"x": 4.576923, "y":637.750777}, {"x": 4.769231, "y":621.342890}, {"x": 4.961538, "y":604.935002}, {"x": 5.153846, "y":588.527114}, {"x": 5.346154, "y":572.119227}, {"x": 5.538462, "y":555.711339}, {"x": 5.730769, "y":539.303452}, {"x": 5.923077, "y":522.895564}, {"x": 6.115385, "y":506.487676}, {"x": 6.307692, "y":490.079789}, {"x": 6.500000, "y":473.671901}, {"x": 6.650000, "y":460.873749}, {"x": 6.650000, "y":460.873749},]; new Chart(ctx2, { "type": 'scatter', "data": { "datasets": [{

"label":"Nasičen Tlak", "data": nasicenTlak, "fill":false, "borderColor":"rgb(75, 192, 192)", showLine: true }, { "label":"Dejanski Tlak", "data": dejanskiTlak, "showLine": true }, { "label":"Dejanski Tlak Tocke", "data": dejanskiTlakTocke, "borderColor":"rgb(75, 50, 20)", "showLine": true }] }, "plugins": [{ beforeDraw: chart => { var ctx = chart.ctx; var xAxis = chart.scales.x; var yAxis = chart.scales.y; ctx.fillStyle = "lightgray"; ctx.rect(xAxis.getPixelForValue(nasicenTlak[1].x), yAxis.top, xAxis.getPixelForValue(nasicenTlak[nasicenTlak.length - 2].x) - xAxis.getPixelForValue(nasicenTlak[1].x), yAxis.bottom-yAxis.top); ctx.fill(); nasicenTlak.forEach((value, index) => { if (index > 0 && index < nasicenTlak.length - 1) { var x = xAxis.getPixelForValue(nasicenTlak[index].x); var yTop = yAxis.getPixelForValue(nasicenTlak[index].y); ctx.save(); ctx.strokeStyle = '#404040'; ctx.beginPath(); ctx.moveTo(x, yAxis.bottom); ctx.lineTo(x, yAxis.top); ctx.stroke(); ctx.restore(); } }); } }], "options": { "scales": { x: { type: "linear", position: "bottom", min: -0.10, max: 6.65 + 0.1 } }, "plugins": { zoom: { zoom: { wheel: { enabled: true, }, pinch: { enabled: true }, mode: 'x', }, pan: { enabled: true, mode: 'x', }, } } } });

Analiza netransparentne konstrukcije

Naziv:	Temeljna plošča				
Tip:	Tla na terenu pri ploskovnem gretju				
U=	0.182 W/m2K	U_{max}=	0.300 W/m2K	Ustreza	
f_{Rsi}=	1.000	$f_{Rsi,min}$=	0.557	Ustreza	

	d [m]	λ [W/mK]	ρ [kg/m^3]	c_p [J/kg K]	μ [-]	R [m^{2}K/W]	s_d [m]	
Les	0,010	0,210	800	2510		60,0	0,048	0,600
Estrih	0,050	0,930	1800	960		15,0	0,054	0,750
EPS 100	0,080	0,039	15	1260		25,0	2,051	2,000
Beton	0,300	2,040	2400	960		60,0	0,147	18,000
XPS	0,120	0,038	33	1500		120,0	3,158	14,400

Prikaz temperature v konstrukciji

const ctx = document.getElementById('myChart'); var temp = [{"x": -0.050000, "y":20.000000}, {"x": 0.000000, "y":20.000000}, {"x": 0.010000, "y":19.818103}, {"x": 0.060000, "y":19.612736}, {"x": 0.068889, "y":18.742118}, {"x": 0.077778, "y":17.871500}, {"x": 0.086667, "y":17.000882}, {"x": 0.095556, "y":16.130264}, {"x": 0.104444, "y":15.259646}, {"x": 0.113333, "y":14.389028}, {"x": 0.122222, "y":13.518410}, {"x": 0.131111, "y":12.647792}, {"x": 0.140000, "y":11.777174}, {"x": 0.440000, "y":11.215434}, {"x": 0.449231, "y":10.287538}, {"x": 0.458462, "y":9.359643}, {"x": 0.467692, "y":8.431747}, {"x": 0.476923, "y":7.503852}, {"x": 0.486154, "y":6.575957}, {"x": 0.495385, "y":5.648061}, {"x": 0.504615, "y":4.720166}, {"x": 0.513846, "y":3.792270}, {"x": 0.523077, "y":2.864375}, {"x": 0.532308, "y":1.936480}, {"x": 0.541538, "y":1.008584}, {"x": 0.550769, "y":0.080689}, {"x": 0.560000, "y":-0.847207}, {"x": 0.560000, "y":-0.847207}, {"x": 0.610000, "y":-1.000000}]; new Chart(ctx, { "type": 'scatter', "data": { "datasets": [{ "label":"Temperatura v konstrukciji", "data": temp, "fill":false, "borderColor": "#fa4444", "lineTension":0.1, showLine: true }] }, plugins: [{ beforeDraw: chart => { var ctx = chart.ctx; var xAxis = chart.scales.x; var yAxis = chart.scales.y; ctx.fillStyle = "lightgray"; ctx.rect(xAxis.getPixelForValue(temp[1].x), yAxis.top, xAxis.getPixelForValue(temp[temp.length - 2].x) - xAxis.getPixelForValue(temp[1].x), yAxis.bottom-yAxis.top); ctx.fill(); temp.forEach((value, index) => { if (index > 0 && index

Prikaz tlaka in kondenzacije

	d [cm]	λ [W/mK]	R [m^{2}K/W]	s_d [m]	T [°C]	p_{dej} [Pa]	p_{nas} [Pa]	g_c [g/m^2 m]	M_a [g/m^2]
Prostor					20	1028	2337		
Notr. površina					20	1028	2337		
Les	1	0.21	0.048	0.6	19.8	1018.7	2310.8		
Estrih	5	0.93	0.054	0.75	19.6	1006.8	2281.5		
EPS 100.1	0.9	0.039	0.228	0.2222	18.7	1003.3	2161.1		
EPS 100.2	0.9	0.039	0.228	0.2222	17.9	999.8	2046.2		
EPS 100.3	0.9	0.039	0.228	0.2222	17	996.3	1936.8		
EPS 100.4	0.9	0.039	0.228	0.2222	16.1	992.7	1832.5		
EPS 100.5	0.9	0.039	0.228	0.2222	15.3	989.2	1733.1		
EPS 100.6	0.9	0.039	0.228	0.2222	14.4	985.7	1638.5		
EPS 100.7	0.9	0.039	0.228	0.2222	13.5	982.1	1548.5		
EPS 100.8	0.9	0.039	0.228	0.2222	12.6	978.6	1462.8		
EPS 100.9	0.9	0.039	0.228	0.2222	11.8	975.1	1381.3		
Beton	30	2.04	0.147	18	11.2	689.4	1330.9		
XPS.1	0.9	0.038	0.243	1.1077	10.3	671.8	1251.2		
XPS.2	0.9	0.038	0.243	1.1077	9.4	654.3	1175.6		
XPS.3	0.9	0.038	0.243	1.1077	8.4	636.7	1104.1		

	d [cm]	λ [W/mK]	R [m^2K/W]	s_d [m]	T [°C]	p_{dej} [Pa]	p_{nas} [Pa]	g_c [g/m^2 m]	M_a [g/m^2]
XPS.4	0.9	0.038	0.243	1.1077	7.5	619.1	1036.5		
XPS.5	0.9	0.038	0.243	1.1077	6.6	601.5	972.6		
XPS.6	0.9	0.038	0.243	1.1077	5.6	583.9	912.1		
XPS.7	0.9	0.038	0.243	1.1077	4.7	566.4	855		
XPS.8	0.9	0.038	0.243	1.1077	3.8	548.8	801		
XPS.9	0.9	0.038	0.243	1.1077	2.9	531.2	750.1		
XPS.10	0.9	0.038	0.243	1.1077	1.9	513.6	702.1		
XPS.11	0.9	0.038	0.243	1.1077	1	496	656.8		
XPS.12	0.9	0.038	0.243	1.1077	0.1	478.5	614.1		
XPS.13	0.9	0.038	0.243	1.1077	-0.8	460.9	569.2		
Zun. površina					-0.8	461	569		
Okolica					-1	461	562		

const ctx2 = document.getElementById('myChart2'); // var nasicenTlak = [{"x": -1.787500, "y":2336.951144}, {"x": 0.000000, "y":2336.951144}, {"x": 0.600000, "y":2310.767915}, {"x": 1.350000, "y":2281.514864}, {"x": 1.572222, "y":2161.068248}, {"x": 1.794444, "y":2046.222845}, {"x": 2.016667, "y":1936.756365}, {"x": 2.238889, "y":1832.453646}, {"x": 2.461111, "y":1733.106491}, {"x": 2.683333, "y":1638.513508}, {"x": 2.905556, "y":1548.479946}, {"x": 3.127778, "y":1462.817536}, {"x": 3.350000, "y":1381.344337}, {"x": 21.350000, "y":1330.917125}, {"x": 22.457692, "y":1251.157624}, {"x": 23.565385, "y":1175.631222}, {"x": 24.673077, "y":1104.144671}, {"x": 25.780769, "y":1036.511947}, {"x": 26.888462, "y":972.554054}, {"x": 27.996154, "y":912.098823}, {"x": 29.103846, "y":854.980724}, {"x": 30.211538, "y":801.040668}, {"x": 31.319231, "y":750.125819}, {"x": 32.426923, "y":702.089416}, {"x": 33.534615, "y":656.790581}, {"x": 34.642308, "y":614.094151}, {"x": 35.750000, "y":569.211483}, {"x": 35.750000, "y":569.211483}, {"x": 35.750000, "y":562.041157},]; // var dejanskiTlak = [{"x": 0, "y": 1028.258503273}, {"x": 35.75, "y": 460.87374857031}]; // var dejanskiTlakTocke = [{"x": 0.000000, "y":1028.258503}, {"x": 0.600000, "y":1018.735962}, {"x": 1.350000, "y":1006.832785}, {"x": 1.572222, "y":1003.305918}, {"x": 1.794444, "y":999.779051}, {"x": 2.016667, "y":996.252184}, {"x": 2.238889, "y":992.725317}, {"x": 2.461111, "y":989.198449}, {"x": 2.683333, "y":985.671582}, {"x": 2.905556, "y":982.144715}, {"x": 3.127778, "y":978.617848}, {"x": 3.350000, "y":975.090981}, {"x": 21.350000, "y":689.414741}, {"x": 22.457692, "y":671.834664}, {"x": 23.565385, "y":654.254588}, {"x": 24.673077, "y":636.674512}, {"x": 25.780769, "y":619.094435}, {"x": 26.888462, "y":601.514359}, {"x": 27.996154, "y":583.934283}, {"x": 29.103846, "y":566.354206}, {"x": 30.211538, "y":548.774130}, {"x": 31.319231, "y":531.194054}, {"x": 32.426923, "y":513.613978}, {"x": 33.534615, "y":496.033901}, {"x": 34.642308, "y":478.453825}, {"x": 35.750000, "y":460.873749}, {"x": 35.750000, "y":460.873749},]; new Chart(ctx2, { "type": 'scatter', "data": { "datasets": [{ "label":"Nasičen Tlak", "data": nasicenTlak, "fill":false, "borderColor":"rgb(75, 192, 192)", showLine: true }, { "label":"Dejanski Tlak", "data": dejanskiTlak, "showLine": true }, { "label":"Dejanski Tlak Tocke", "data": dejanskiTlakTocke, "borderColor":"rgb(75, 50, 20)", "showLine": true }] }, "plugins": [{ beforeDraw: chart => { var ctx = chart.ctx; var xAxis = chart.scales.x; var yAxis = chart.scales.y; ctx.fillStyle = "lightgray"; ctx.rect(xAxis.getPixelForValue(nasicenTlak[1].x), yAxis.top, xAxis.getPixelForValue(nasicenTlak[nasicenTlak.length - 2].x) - xAxis.getPixelForValue(nasicenTlak[1].x), yAxis.bottom-yAxis.top); ctx.fill(); nasicenTlak.forEach((value, index) => { if (index > 0 && index < nasicenTlak.length - 1) { var x = xAxis.getPixelForValue(nasicenTlak[index].x); var yTop = yAxis.getPixelForValue(nasicenTlak[index].y); ctx.save(); ctx.strokeStyle = '#404040'; ctx.beginPath(); ctx.moveTo(x, yAxis.bottom); ctx.lineTo(x, yAxis.top); ctx.stroke(); ctx.restore(); } }); } }], "options": { "scales": { x: { type: "linear", position: "bottom", min: -0.10, max: 35.75 + 0.1 } }, "plugins": { zoom: { zoom: { wheel: { enabled: true, }, pinch: { enabled: true }, mode: 'x', }, pan: { enabled: true, mode: 'x', }, } } } });

Analiza netransparentne konstrukcije

Naziv:	Strop				
Tip:	Strop proti neogrevanemu prostoru				
U=	0.111 W/m2K	U_{max}=	0.150 W/m2K	Ustreza	
f_{Rsi}=	0.989	$f_{Rsi,min}$=	0.557	Ustreza	

	d [m]	λ [W/mK]	ρ [kg/m^3]	c_p [J/kg K]	μ [-]	R [m^{2}K/W]	s_d [m]	
Beton	0,150	2,040	2400	960		60,0	0,074	9,000
Steklena volna	0,300	0,034	23	1030		1,0	8,824	0,300

Prikaz temperature v konstrukciji

const ctx = document.getElementById('myChart'); var temp = [{"x": -0.050000, "y":20.000000}, {"x": 0.000000, "y":19.767624}, {"x": 0.150000, "y":19.596758}, {"x": 0.158333, "y":19.027208}, {"x": 0.166667, "y":18.457658}, {"x": 0.175000, "y":17.888108}, {"x": 0.183333, "y":17.318558}, {"x": 0.191667, "y":16.749007}, {"x": 0.200000, "y":16.179457}, {"x": 0.208333, "y":15.609907}, {"x": 0.216667, "y":15.040357}, {"x": 0.225000, "y":14.470806}, {"x": 0.233333, "y":13.901256}, {"x": 0.241667, "y":13.331706}, {"x": 0.250000, "y":12.762156}, {"x": 0.258333, "y":12.192606}, {"x": 0.266667, "y":11.623055}, {"x": 0.275000, "y":11.053505}, {"x": 0.283333, "y":10.483955}, {"x": 0.291667, "y":9.914405}, {"x": 0.300000, "y":9.344855}, {"x": 0.308333, "y":8.775304}, {"x": 0.316667, "y":8.205754}, {"x": 0.325000, "y":7.636204}, {"x": 0.333333, "y":7.066654}, {"x": 0.341667, "y":6.497103}, {"x": 0.350000, "y":5.927553}, {"x": 0.358333, "y":5.358003}, {"x": 0.366667, "y":4.788453}, {"x": 0.375000, "y":4.218903}, {"x": 0.383333, "y":3.649352}, {"x": 0.391667, "y":3.079802}, {"x": 0.400000, "y":2.510252}, {"x": 0.408333, "y":1.940702}, {"x": 0.416667, "y":1.371151}, {"x": 0.425000, "y":0.801601}, {"x": 0.433333, "y":0.232051}, {"x": 0.441667, "y":-0.337499}, {"x": 0.450000, "y":-0.907049}, {"x": 0.450000, "y":-0.907049}, {"x": 0.500000, "y":-1.000000}]; new Chart(ctx, { "type": 'scatter', "data": { "datasets": [{ "label":"Temperatura v konstrukciji", "data": temp, "fill":false, "borderColor": "#fa4444", "lineTension":0.1, showLine: true }] }, plugins: [{ beforeDraw: chart => { var ctx = chart.ctx; var xAxis = chart.scales.x; var yAxis = chart.scales.y; ctx.fillStyle = "lightgray"; ctx.rect(xAxis.getPixelForValue(temp[1].x), yAxis.top, xAxis.getPixelForValue(temp[temp.length - 2].x) - xAxis.getPixelForValue(temp[1].x), yAxis.bottom-yAxis.top); ctx.fill(); temp.forEach((value, index) => { if (index > 0 && index Prikaz tlaka in kondenzacije

	d [cm]	λ [W/mK]	R [m^{2}K/W]	s_d [m]	T [°C]	p_{dej} [Pa]	p_{nas} [Pa]	g_c [g/m^2 m]	M_a [g/m^2]
Prostor					20	1028	2337		
Notr. površina					19.8	1028	2304		
Beton	15	2.04	0.074	9	19.6	479.2	2279.3		
Steklena volna.1	0.8	0.034	0.245	0.0083	19	478.7	2199.9		
Steklena volna.2	0.8	0.034	0.245	0.0083	18.5	478.2	2122.9		
Steklena volna.3	0.8	0.034	0.245	0.0083	17.9	477.7	2048.4		
Steklena volna.4	0.8	0.034	0.245	0.0083	17.3	477.1	1976.1		
Steklena volna.5	0.8	0.034	0.245	0.0083	16.7	476.6	1906.1		
Steklena volna.6	0.8	0.034	0.245	0.0083	16.2	476.1	1838.2		

	d [cm]	λ [W/mK]	R [m^2K/W]	s_d [m]	T [°C]	p_{dej} [Pa]	p_{nas} [Pa]	g_c [g/m^2 m]	M_a [g/m^2]
Steklena volna.7	0.8	0.034	0.245	0.0083	15.6	475.6	1772.5		
Steklena volna.8	0.8	0.034	0.245	0.0083	15	475.1	1708.8		
Steklena volna.9	0.8	0.034	0.245	0.0083	14.5	474.6	1647.2		
Steklena volna.10	0.8	0.034	0.245	0.0083	13.9	474.1	1587.5		
Steklena volna.11	0.8	0.034	0.245	0.0083	13.3	473.6	1529.7		
Steklena volna.12	0.8	0.034	0.245	0.0083	12.8	473.1	1473.8		
Steklena volna.13	0.8	0.034	0.245	0.0083	12.2	472.6	1419.7		
Steklena volna.14	0.8	0.034	0.245	0.0083	11.6	472.1	1367.3		
Steklena volna.15	0.8	0.034	0.245	0.0083	11.1	471.6	1316.7		
Steklena volna.16	0.8	0.034	0.245	0.0083	10.5	471	1267.7		
Steklena volna.17	0.8	0.034	0.245	0.0083	9.9	470.5	1220.3		
Steklena volna.18	0.8	0.034	0.245	0.0083	9.3	470	1174.5		
Steklena volna.19	0.8	0.034	0.245	0.0083	8.8	469.5	1130.2		
Steklena volna.20	0.8	0.034	0.245	0.0083	8.2	469	1087.3		
Steklena volna.21	0.8	0.034	0.245	0.0083	7.6	468.5	1045.9		
Steklena volna.22	0.8	0.034	0.245	0.0083	7.1	468	1005.9		
Steklena volna.23	0.8	0.034	0.245	0.0083	6.5	467.5	967.3		
Steklena volna.24	0.8	0.034	0.245	0.0083	5.9	467	929.9		
Steklena volna.25	0.8	0.034	0.245	0.0083	5.4	466.5	893.9		
Steklena volna.26	0.8	0.034	0.245	0.0083	4.8	466	859.1		
Steklena volna.27	0.8	0.034	0.245	0.0083	4.2	465.4	825.5		
Steklena volna.28	0.8	0.034	0.245	0.0083	3.6	464.9	793		
Steklena volna.29	0.8	0.034	0.245	0.0083	3.1	464.4	761.7		
Steklena volna.30	0.8	0.034	0.245	0.0083	2.5	463.9	731.5		
Steklena volna.31	0.8	0.034	0.245	0.0083	1.9	463.4	702.3		
Steklena volna.32	0.8	0.034	0.245	0.0083	1.4	462.9	674.2		
Steklena volna.33	0.8	0.034	0.245	0.0083	0.8	462.4	647		
Steklena volna.34	0.8	0.034	0.245	0.0083	0.2	461.9	620.9		
Steklena volna.35	0.8	0.034	0.245	0.0083	-0.3	461.4	593.7		
Steklena volna.36	0.8	0.034	0.245	0.0083	-0.9	460.9	566.4		
Zun. površina					-0.9	461	566		
Okolica					-1	461	562		

const ctx2 = document.getElementById('myChart2'); // var nasicenTlak = [{"x": -0.465000, "y":2336.951144}, {"x": 0.000000, "y":2303.547252}, {"x": 9.000000, "y":2279.252692}, {"x": 9.008333, "y":2199.881620}, {"x": 9.016667, "y":2122.939352}, {"x": 9.025000, "y":2048.362641}, {"x": 9.033333, "y":1976.089563}, {"x": 9.041667, "y":1906.059504}, {"x": 9.050000, "y":1838.213135}, {"x": 9.058333, "y":1772.492395}, {"x":

9.066667, "y":1708.840469}, {"x": 9.075000, "y":1647.201772}, {"x": 9.083333, "y":1587.521927}, {"x": 9.091667, "y":1529.747749}, {"x": 9.100000, "y":1473.827221}, {"x": 9.108333, "y":1419.709481}, {"x": 9.116667, "y":1367.344799}, {"x": 9.125000, "y":1316.684562}, {"x": 9.133333, "y":1267.681252}, {"x": 9.141667, "y":1220.288433}, {"x": 9.150000, "y":1174.460726}, {"x": 9.158333, "y":1130.153797}, {"x": 9.166667, "y":1087.324339}, {"x": 9.175000, "y":1045.930050}, {"x": 9.183333, "y":1005.929620}, {"x": 9.191667, "y":967.282712}, {"x": 9.200000, "y":929.949946}, {"x": 9.208333, "y":893.892880}, {"x": 9.216667, "y":859.073996}, {"x": 9.225000, "y":825.456682}, {"x": 9.233333, "y":793.005215}, {"x": 9.241667, "y":761.684747}, {"x": 9.250000, "y":731.461285}, {"x": 9.258333, "y":702.301682}, {"x": 9.266667, "y":674.173613}, {"x": 9.275000, "y":647.045566}, {"x": 9.283333, "y":620.886822}, {"x": 9.291667, "y":593.736587}, {"x": 9.300000, "y":566.393318}, {"x": 9.300000, "y":566.393318}, {"x": 9.300000, "y":562.041157},]; // var dejanskiTlak = [{"x": 0, "y": 1028.258503273}, {"x": 9.3, "y": 460.87374857031}]; // var dejanskiTlakTocke = [{"x": 0.000000, "y":1028.258503}, {"x": 9.000000, "y":479.176483}, {"x": 9.008333, "y":478.668073}, {"x": 9.016667, "y":478.159664}, {"x": 9.025000, "y":477.651255}, {"x": 9.033333, "y":477.142845}, {"x": 9.041667, "y":476.634436}, {"x": 9.050000, "y":476.126027}, {"x": 9.058333, "y":475.617618}, {"x": 9.066667, "y":475.109208}, {"x": 9.075000, "y":474.600799}, {"x": 9.083333, "y":474.092390}, {"x": 9.091667, "y":473.583981}, {"x": 9.100000, "y":473.075571}, {"x": 9.108333, "y":472.567162}, {"x": 9.116667, "y":472.058753}, {"x": 9.125000, "y":471.550343}, {"x": 9.133333, "y":471.041934}, {"x": 9.141667, "y":470.533525}, {"x": 9.150000, "y":470.025116}, {"x": 9.158333, "y":469.516706}, {"x": 9.166667, "y":469.008297}, {"x": 9.175000, "y":468.499888}, {"x": 9.183333, "y":467.991478}, {"x": 9.191667, "y":467.483069}, {"x": 9.200000, "y":466.974660}, {"x": 9.208333, "y":466.466251}, {"x": 9.216667, "y":465.957841}, {"x": 9.225000, "y":465.449432}, {"x": 9.233333, "y":464.941023}, {"x": 9.241667, "y":464.432614}, {"x": 9.250000, "y":463.924204}, {"x": 9.258333, "y":463.415795}, {"x": 9.266667, "y":462.907386}, {"x": 9.275000, "y":462.398976}, {"x": 9.283333, "y":461.890567}, {"x": 9.291667, "y":461.382158}, {"x": 9.300000, "y":460.873749}, {"x": 9.300000, "y":460.873749},]; new Chart(ctx2, { "type": 'scatter', "data": { "datasets": [{ "label":"Nasičen Tlak", "data": nasicenTlak, "fill":false, "borderColor":"rgb(75, 192, 192)", showLine: true }, { "label":"Dejanski Tlak", "data": dejanskiTlak, "showLine": true }, { "label":"Dejanski Tlak Tocke", "data": dejanskiTlakTocke, "borderColor":"rgb(75, 50, 20)", "showLine": true }] }, "plugins": [{ beforeDraw: chart => { var ctx = chart.ctx; var xAxis = chart.scales.x; var yAxis = chart.scales.y; ctx.fillStyle = "lightgray"; ctx.rect(xAxis.getPixelForValue(nasicenTlak[1].x), yAxis.top, xAxis.getPixelForValue(nasicenTlak[nasicenTlak.length - 2].x) - xAxis.getPixelForValue(nasicenTlak[1].x), yAxis.bottom-yAxis.top); ctx.fill(); nasicenTlak.forEach((value, index) => { if (index > 0 && index < nasicenTlak.length - 1) { var x = xAxis.getPixelForValue(nasicenTlak[index].x); var yTop = yAxis.getPixelForValue(nasicenTlak[index].y); ctx.save(); ctx.strokeStyle = '#404040'; ctx.beginPath(); ctx.moveTo(x, yAxis.bottom); ctx.lineTo(x, yAxis.top); ctx.stroke(); ctx.restore(); } }); } }], "options": { "scales": { x: { type: "linear", position: "bottom", min: -0.10, max: 9.3 + 0.1 } }, "plugins": { zoom: { zoom: { wheel: { enabled: true, }, pinch: { enabled: true }, mode: 'x', }, pan: { enabled: true, mode: 'x', }, } } } });

Ovoj cone "Ogrevana cona"

← Nazaj

Zaporedna št. konstrukcije			Z1	Tp1	Ts1	V1	O1	O1	O1	O1
Št. enakih			1	1	1	1	1	3	2	2
Orientacija			S			S	V	J	V	S
Naklon		°	90	0	0	90	90	90	90	90
Toplotna prehodnost	U	W/m²K	0,142	0,125	0,111	1,000	0,683	0,734	0,820	0,820
Površina	A	m²	243,0	200,0	200,0	3,0	15,0	5,0	1,0	1,0
Faktor	b		1,00	1,30	1,00	1,00	1,00	1,00	1,00	1,00
	U×A×b	W/K	34,5	32,5	22,1	3,0	10,2	3,7	0,8	0,8
	d_f	m								

Faktor senčenja okoliških ovir $F_{sh,glob,ov,m}$									
jan	1,000	1,000	1,000	1,000	0,989	0,959	0,956	1,000
feb	1,000	1,000	1,000	1,000	0,984	0,936	0,938	1,000
mar	1,000	1,000	1,000	1,000	0,982	0,913	0,938	1,000
apr	1,000	1,000	1,000	0,993	0,980	0,895	0,937	0,994
maj	1,000	1,000	1,000	0,964	0,978	0,888	0,937	0,978
jun	1,000	1,000	1,000	0,945	0,793	0,895	0,939	0,971
jul	1,000	1,000	1,000	0,953	0,788	0,889	0,937	0,974
avg	1,000	1,000	1,000	0,984	0,799	0,887	0,935	0,988
sep	1,000	1,000	1,000	1,000	0,843	0,908	0,943	1,000
okt	1,000	1,000	1,000	1,000	0,986	0,930	0,948	1,000
nov	1,000	1,000	1,000	1,000	0,987	0,956	0,949	1,000
dec	1,000	1,000	1,000	1,000	0,987	0,964	0,946	1,000

Mesečno sončno obsevanje $H_{sol,m}$ (Wh/m²m)	št. dni							
jan	31	7967	28427	28427	7967	14446	43431	14446	7967
feb	28	11480	48468	48468	11480	22484	59752	22484	11480
mar	31	19654	85529	85529	19654	41664	72354	41664	19654
apr	30	30810	121470	121470	30810	58440	69870	58440	30810
maj	31	37200	151714	151714	37200	71331	65999	71331	37200
jun	30	42510	158220	158220	42510	69660	60780	69660	42510
jul	31	39370	169539	169539	39370	73129	66774	73129	39370
avg	31	32240	146909	146909	32240	66619	74803	66619	32240
sep	30	23610	100620	100620	23610	45420	72000	45420	23610
okt	31	16306	59241	59241	16306	28117	56451	28117	16306
nov	30	9720	29490	29490	9720	15960	33780	15960	9720
dec	31	7006	21638	21638	7006	12214	30907	12214	7006

Transmisijske toplotne izgube $Q_{tr,m}$ (kWh/m)	ΔT	št. dni	OGREVANJE								
jan	21	31	690,7	348,7	470,8	48,7	169,5	181,3	26,9	26,9	1963,4
feb	19	28	564,5	295,6	384,7	39,8	138,5	148,2	22,0	22,0	1615,2
mar	15	31	493,4	284,3	336,3	34,8	121,1	129,5	19,2	19,2	1437,7
apr	11	30	350,1	290,2	238,6	24,7	85,9	91,9	13,6	13,6	1108,7
maj	6	31	197,3	279,4	134,5	13,9	48,4	51,8	7,7	7,7	740,8
jun	3	30	95,5	258,6	65,1	6,7	23,4	25,1	3,7	3,7	481,8
jul	1	31	32,9	259,0	22,4	2,3	8,1	8,6	1,3	1,3	335,9
avg	1	31	32,9	259,0	22,4	2,3	8,1	8,6	1,3	1,3	335,9
sep	5	30	159,2	266,5	108,5	11,2	39,1	41,8	6,2	6,2	638,6

okt	10	31	328,9	230,7	224,2	23,2	80,7	86,3	12,8	12,8	999,7
nov	16	30	509,3	285,5	347,1	35,9	125,0	133,7	19,8	19,8	1476,2
dec	20	31	657,8	337,9	448,4	46,4	161,4	172,7	25,6	25,6	1875,8

Transmisijske toplotne izgube $Q_{tr,m}$ (kWh/m)	ΔT	št. dni	HLAJENJE								Skupaj
jan	27	31	888,1	348,7	605,3	62,7	217,9	233,1	34,6	34,6	2424,8
feb	25	28	742,7	295,6	506,2	52,4	182,2	194,9	28,9	28,9	2031,9
mar	21	31	690,7	284,3	470,8	48,7	169,5	181,3	26,9	26,9	1899,1
apr	17	30	541,1	290,2	368,8	38,2	132,8	142,0	21,1	21,1	1555,2
maj	12	31	394,7	279,4	269,0	27,9	96,9	103,6	15,4	15,4	1202,2
jun	9	30	286,5	258,6	195,2	20,2	70,3	75,2	11,1	11,1	928,3
jul	7	31	230,2	259,0	156,9	16,2	56,5	60,4	9,0	9,0	797,3
avg	7	31	230,2	259,0	156,9	16,2	56,5	60,4	9,0	9,0	797,3
sep	11	30	350,1	266,5	238,6	24,7	85,9	91,9	13,6	13,6	1085,0
okt	16	31	526,3	230,7	358,7	37,1	129,1	138,1	20,5	20,5	1461,0
nov	22	30	700,3	285,5	477,3	49,4	171,8	183,8	27,2	27,2	1922,6
dec	26	31	855,2	337,9	582,9	60,4	209,8	224,5	33,3	33,3	2337,2

Dobitki sončnega obsevanja Qsol,m (kWh/m)	št. dni	OGREVANJE								Skupaj
jan	31	-25,73	0,00	-40,84	-2,11	96,81	272,20	10,91	5,80	317,1
feb	28	-20,97	0,00	-36,88	-1,91	154,64	369,00	17,41	8,99	490,3
mar	31	-19,53	0,00	-40,84	-2,11	291,00	436,05	33,01	16,03	713,6
apr	30	-12,65	0,00	-39,52	-2,05	410,40	412,91	46,76	25,66	841,5
maj	31	-10,22	0,00	-40,84	-2,11	501,42	386,37	57,32	30,65	922,6
jun	30	-6,44	0,00	-39,52	-2,05	395,35	358,18	56,12	35,00	796,6
jul	31	-9,07	0,00	-40,84	-2,11	412,48	391,39	58,75	32,37	843,0
avg	31	-12,85	0,00	-40,84	-2,11	380,91	438,31	53,33	26,69	843,4
sep	30	-16,47	0,00	-39,52	-2,05	271,87	431,98	36,34	19,52	701,7
okt	31	-21,31	0,00	-40,84	-2,11	194,75	345,18	22,14	13,10	510,9
nov	30	-23,83	0,00	-39,52	-2,05	107,75	209,40	12,12	7,38	271,2
dec	31	-26,24	0,00	-40,84	-2,11	80,53	192,47	8,94	4,96	217,7

Dobitki sončnega obsevanja Qsol,m (kWh/m)	št. dni

Analiza sNES "Testni Projekt"

← Nazaj

Kazalniki energijske učinkovitosti stavbe			
		Količina (kWh/an)	
Neutežena dovedena energija za delovanje TSS	$E_{del,an}$	9180	
Utežena dovedena energija za delovanje TSS	$E_{w,del,an}$	17235	
Obnovljiva primarna energija dovedene energije	$E_{Pren,an}$	9180	
Neobnovljiva primarna energija dovedene energije	$E_{Pnren,an}$	8055	
Skupna primarna energija	$E_{Ptot,an}$	17235	
		Vrednost (%)	
Razmernik obnovljivih virov energije ROVE		53	
Minimalni zahtevani razmernik $ROVE_{min}$		50	
Ustreza minimalni zahtevi		**DA**	
		Vrednost (-)	
Korekcijski faktor razmernika ROVE X_{OVE}		1,0	
Kompenzacijski faktor razmernika ROVE Y_{ROVE}		0,8	
Korekcijski faktor dovoljene skupne primarne energije glede na vrsto stavbe X_s		1,0	
Korekcijski faktor dovoljene skupne primarne energije glede na leto uveljavitve X_p		1,0	
Kompenzacijski faktor potrebne toplote za ogrevanje $Y_{H,nd}$		1,2	
		Količina (kWh/an)	
Specifična potrebna skupna primarna energija	$E'_{Ptot,an}$	108	
Korigirana specifična potrebna primarna energija	$E'_{Ptot,kor,an}$	103	
Dovoljena specifična potrebna skupna primarna energija	$E'_{Ptot,kor,an}$	75	
Korigirana dovoljena specifična potrebna skupna primarna energija	$E'_{Ptot,kor,dov,an}$	75	
Ustreza minimalni zahtevi		**NE**	
		Vrednost (kg/an)	
Izpusti ogljikovega dioksida	$M_{CO2,an}$	2255	