SAVALANSOLAR.com

SAVALANSOLAR

2021 CATALOG

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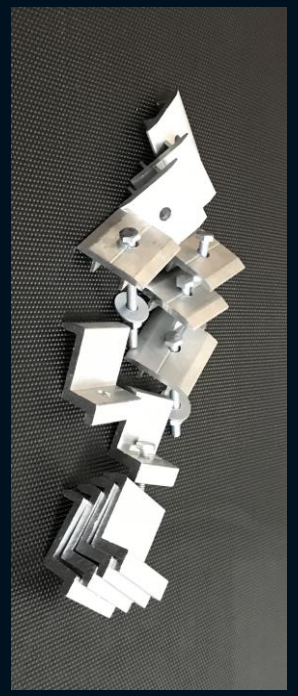
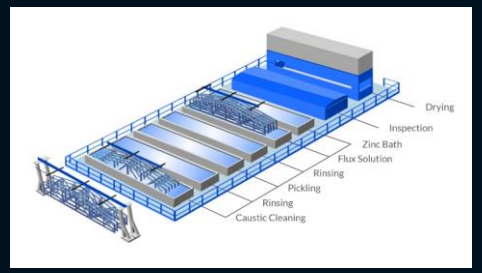
Structural Production Line

- The most advanced and accurate profile production machine
- Punch by CNC machine
- Daily production up to 40 tons of punched profiles



Hot Deep Galvanized

- All parts are covered by hot deep galvanizing method
- Galvanized operation according to ASTM-123A standard
- The average coverage in parts is 65 microns



Typical PV Structure

- The most optimal PV structure
- 20 years quality guarantee
- Tolerating wind speeds of 120 to 150 K/H

- Typical structures are designed in such a way that different models can be easily built.
- The devices of this factory can produce all kinds of profiles with different dimensions and up to 12 meters in length
- Production is by cold rolling method and all Iranian and European standards are observed
- Typical structures can be easily installed on the roof and floor
- These structures can be easily installed for home and large scale power plants

Types of widely used PV structures

According to the needs of the market , the PV structures can be installed in two types of houses and power plants

TYPES OF HOUSES

- Home PV solar structures can usually be installed in 6-8-10-14- and 16-panels types.
- From the combination of parts of this structure, various structures can be easily constructed and installed. Exactly the same as LEGO.

TYPES OF POWER PLANT

- Power plant types are also produced and installed by joining the same PV structures and removing additional parts.
- These types of solar structures are in the most optimal technical and price condition.

Solar panel and inverter sales department

Import and distribution of two very practical products with excellent quality in a very high volume.

KACO INVERTER

- Selecting a model from the best products of the German company Kaco for mass import.
- The selected inverter is one of the best products of Kaco company . The BLUEPLANET Series .

AESOLAR PANEL

- The choice of solar panel is based on the best output efficiency and quality .
- For this reason, AESOLAR Company was selected to supply the solar panel .

Approvals and Consents

By maintaining excellent quality and engineering in design and construction, we have gained the full trust of customers. For example, we received the approval of the German AESOLAR company .


Shahron
سولار گستر شهران
طراحی،مشاوره و اجرای سیستم‌های خورشیدی و بادی
بسمه تعالی
مدیر عامل محترم شرکت ساوالان سولار
جناب آقای مهندس محمدی
موضوع: رضایت نامه تامین و نصب استراکچر های گالوانیزه نیروگاه های خورشیدی
با سلام و احترام
بدینوسیله این مجموعه رضایت خود را از کیفیت سازه های ارسالی و خدمات جانبی همچون نصب و خدمات پس از فروش مجموعه ساوالان سولار اعلام می دارد.
در ضمن در مورد سازه های منسوبه به ظرفیت حدوداً ۱۵۰ کیلووات در انواع پشت بامی و مزرعه های خورشیدی با توجه به نصب دقیق طبق نقشه های تایید شده تا کنون هیچ گونه تغییر حالت یا خللی در عملکرد سازه ها مشاهده نشده است.
امید بر آن داریم که آن مجموعه همچنان در حفظ و ارتقاء این کیفیت مصمم باشد.
با تقدیم احترام
Shahron
سولار گستر شهران


گروه صنعتی نیکاو
Nikav Industrial Group
Excutor of Solar power plants & Smart control systems
NIKAV
تاریخ: 1398.04.18
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مخاطب: جناب آقای مهندس محمدی
رونوشت:
پیوست: ندارد
موضوع: رضایت‌نامه
بسمه تعالی
با عرض سلام و ادب
احتراماً بدینوسیله رضایت خود را از ساخت، ارسال به موقع و نصب حدود ۵۰۰ کیلووات استراکچر تولید شده توسط شرکت ساوالان سولار اعلام می‌داریم.
پیشاپیش از لطف شما کمال تشکر و قدردانی را داریم.
با تشکر
یونس پور
شرکت سروش صنعت نیکاو ایساتیس
NIKAV
یزد ، شهرک رزندگان ، خیابان اصالت ،کوچه ۱۰ کدپستی:۸۹۱۵۱۱۶۸۶۷ تلفن:۰۳۵-۳۸۲۱۰۶۵۳
WWW.NIKAVGROUP.COM


گروه انرژی سازان آینده
تاریخ: ۱۳۹۸/۰۵/۰۷
شماره: ۹۸۰۵۰۲۶۹
بسمه تعالی
مقام معظم رهبری : سال روتق تولید
مدیریت محترم عامل شرکت ساوالان سولار
جناب آقای مهندس محمدی
موضوع:رضایت نامه
با سلام
احتراما این مجموعه باتوجه به خرید ونصب بیش از ۱.۵ مگاوات از سازه های تولید شده مجموعه ساوالان سولار، رضایت خود را از کیفیت سازه های ارسالی و خدمات جانبی همچون بازدیدهای هنگام نصب و خدمات پس از فروش اعلام می دارد.
در ضمن سازه های نصب شده نیز که در انواع پشت بامی و مزرعه های خورشیدی می باشد با توجه به نصب دقیق و طبق نقشه های تایید شده تاکنون هیچ گونه تغییر حالت و خستگی سازه ای نداشته اند.
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دانشگاه آزاد اسلامی کاشان
شرکت های فناور و دانش بنیان
دانشگاهی مرکز رشد


AE SOLAR
alternative energy
It's time to save the world !
AE Alternative Energy GmbH, Messerschmittring 54, 86343 Königsbrunn
Date : 01/03/2021
Number : 2021-64376
Structural Computing Guide Of Solar Panel
Savalansolar Hot Deep Galvanized Typical Structure Rev.03
This is not an electrical issue but a mechanical issue.
The length and width of the panels were calculated according to their weight and designed by the construction engineer.
Mechanical calculations were made by the construction engineer. Conforms to the standards.
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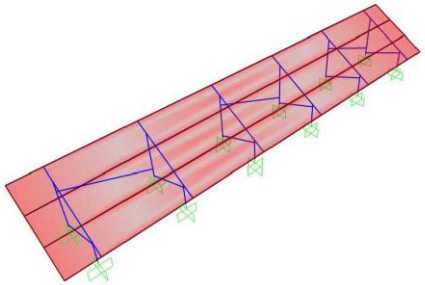
Jurisdiction Augsburg
HRB: 24795
Tax no.: 102/121/20478
VAT no.:DE 268975577

Calculation

All solar structures are designed based on the strictest standards of Iran and Europe.
For example, the wind resistance of solar structures in the two classes is 120 and 150 KM/H.

Structural computing guide of solar panel

Typical galvanized structure of twenty-two solar panels (2×17)



آیین نامه ها

Codes and standard specification

For loading the structure regulation ***Iran National building code number 6-1392*** is studied. In the following, rules of ***AISI -96 LRFD*** which published by American Iron and Steel Institute, governed the designing progress of structure.

مشخصات مصالح

Material specification

Steel ***ST37*** according to DIN standard (F_y=2400$\frac{Kg}{cm^2}$ and F_u=3700$\frac{Kg}{cm^2}$) is used in element of structure and bolts ***A307*** (F_{nt}=310 MPa and F_{nv} =186 MPa) are opt for designing of connections. Concrete with strength specification equal 20 MPa is suitable for foundation construction.

شخصات و الگوهای بار

Pattern and specification of loads

Four types of load (Dead, Wind, Snow, Earthquake) are used in designing of this structure. Self-weight of element structure is calculated by ***SAP*** software automatically and is contributed in dead load.

Weight of solar panel by all its equipment is measured approximately 14 $\frac{Kg}{m^2}$ by panel manufacturer and announced by employer and is contributed in dead load

Ground snow load shall be considered equal with 1 $\frac{KN}{m^2}$ according to employer order. In addition basic wind speed are considered equal with 117$\frac{km}{hour}$ base on employer demand.

Seismic lateral load due to earthquake is calculated according severe seismic design category that because of very low weight of structure is not governing in designing.

detail of distributing and calculating load are mentioned below:

بار مرده

detail calculation related to dead load:

Each purlin portion of dead load : 14×1=14 $\frac{Kg}{m}$

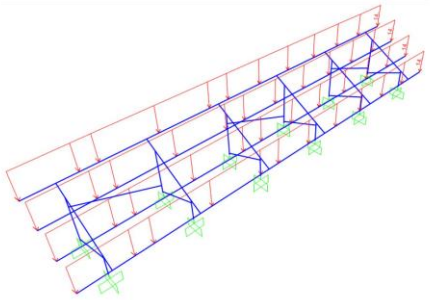


Figure 1 Dead load distribution

بار برف

detail calculation related to snow load:

Pr=0.7CsCtCeIsPg

Cs=1-$\frac{\alpha-\alpha_0}{70-\alpha_0}$=1-$\frac{30-15}{70-15}$=0.73 Ct=1.2 Ce=1 Is=0.8

Pg=1 $\frac{KN}{m^2}$

Pr=0.7×0.73×1.2×1×0.8×1=0.49 $\frac{KN}{m^2}$

AISI-LRFD96 COLD-FORMED STEEL SECTION CHECK
Combo : COMB9
Units : KN, m, C

Frame : 245	Design Sect: C LSF 76-2		
X Mid : 10.139	Design Type: Column		
Y Mid : 2.2	Frame Type : Braced		
Z Mid : 0.934	Sect Class : Non-Slender		
Length : 1.867	Major Axis : 0. degrees counterclockwise from local 3		
Loc : 1.867	RLLF : 1.		
Area : 3.437E-04	SMajor : 8.494E-06	AVMajor: 1.340E-04	sMa:
IMajor : 0.	SMinor : 3.042E-06	AVMinor: 1.480E-04	sMi:
IMinor : 0.	E : 203396357.74		
Ixy : 0.	Fy : 236359.606		

STRESS CHECK FORCES & MOMENTS

Location	Pu	Mu33	Mu22	Vu2	Vu3
1.867	-2.415	0.003	0.487	-0.049	-1.499

RMM DEMAND/CAPACITY RATIO
D/C Ratio: 0.931 = 0.074 + 0.002 + 0.855
= (1/Phic)(P/Pn) + (1/Phib)(Mn33*M33)/(Mn33*Alpha33) + (Mn22*M22)/(Mn22*Alpha22)

AXIAL FORCE DESIGN

	Pu Force	Pn Capacity	Pn0 Capacity	Tn Capacity	Phit Factor
Axial	-2.415	38.643	80.893	80.893	0.95

MOMENT DESIGN

	Mu Moment	Mn Capacity	Mn(Yield) Capacity	Mn(LTB) Capacity	Mnt Capacity
Major Moment	0.003	1.965	1.99	1.965	1.99
Minor Moment	0.487	0.563	0.563	0.563	1.347

	Cm Factor	Alpha Factor	K Factor	L Factor	Ctf Factor
Major Moment	0.85	0.988	1.	0.963	1.
Minor Moment	0.85	0.969	1.	0.813	

	Phib Factor	Phiby Factor
Major Moment	0.9	0.95
Minor Moment	0.95	0.95

SHEAR DESIGN

	Vu Force	Vn Capacity	PhiV Factor	Vn Ratio	Status Check
Major Shear	0.049	18.923	1.	0.003	OK
Minor Shear	1.499	20.9	0.9	0.08	OK

Figure 12 Column detail designing

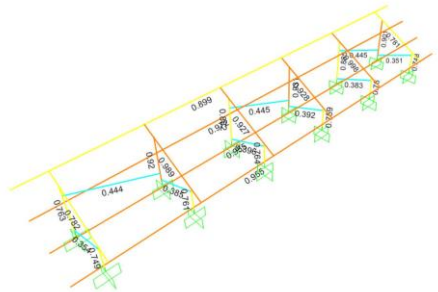


Figure 163 P-M interaction of steel element

طراحی اتصالات

Connection design detail

V_{max}=1472 Kg t_{max}=774 kg

A307 d>12.7mm F_{nt}=310 MPa F_{nv}=186 MPa φ_t=0.75 φ_v=0.65

Bearing Strength at Bolt Holes

Pn = (0.175724 t +1.53) d t Fu = (0.175724×2+1.53)×1.4×0.2×4500=2370 kg
φ Pn=2370×0.65=1540 kg > 1472kg OK

Bolt shear resistance

Pn = AbFn =14/2×14/2×π×186=28.6 KN=2861 kg φ_v Pn=0.65×2861=1860 kg > 1472 kg OK

Projects

This group has been able to produce and install many projects in a short period of time.










Projects

This group has been able to produce and install many projects in a short period of time.










Organization Chart

F.Gerami
Accounting

M.Najafi
Help Desk

ENG.Badeei
Installation Manager

ENG.Pahlavani
ELEC. Engineering Manager

ENG. Ghasemi
Structure Engineering Manager

ENG. R.Mohammadi
CEO of Savalansolar

ENG. Shokouhi
Market Development Manager

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