



FOUNDATIONS AND THEIR TYPES

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ANNOTATION: *This in the article foundations under construction their place , their main tasks and foundation choice criteria wide illuminated . Also , various kind of foundations — their constructive properties , application cases and advantages about detailed information given . Under construction usable materials, soil types , technological approaches and ecological factors also considered is released . Article construction studying in the field students , designers and practical engineers for theoretical and practical importance has .*

KEYWORDS : *Foundation , soil , tape foundation , stamp foundation , slab foundation , reinforced concrete , earthquake resistance , construction engineering, foundation , building stability .*

ENTRANCE

Construction any in engineering of the structure stability and far term service to do his/her basically — that is to the foundation related . Foundation of the building weight land under to the layers one flat distributing giving , most bottom constructive It is an element . It is ground (earth) under layers) from the state come out , certain size and in construction is selected .

Last in years foundation in technologies important changes event is giving . Under construction modern from equipment use , soil deep study and ecological in terms of safe from materials use foundation quality and endurance noticeable at the level Therefore , each building for right foundation type choice – not only economic efficiency , maybe security is a guarantee .

MAIN PART

1. Foundation concept and essence

The **foundation** is building and of buildings constructive from the elements one to be , to be main task loads (static and dynamic loads (ground) under layers) to This element is a building weight of the earth lower to the layers equal distributes , resulting in building not sinking , not moving and indestructible provides .

Foundations construction engineering within **statics** , **soil mechanics** , **earthquake resistance theory** such as sciences with closely related . Foundation under construction applicable main theoretical concepts of the following consists of:

- **Foundation pressure** – foundation through to the ground passing unity to the surface right coming pressure .
- **Grunt's chu' kishi** – ground pressure under the influence squeezes and building down sinks This permanent to be possible , but from the border not to exceed need .
- **Opposite pressure (reaction)** – soil to foundation against impact shows . This in equilibrium forces foundation stability provides .
- **Cargo distribution zone** – foundation under to the ground loads how distribution represents .

2. Soil properties and to the foundation impact

Foundation in choosing soil (land) physical-mechanical features important place holds . Various The grounds are different . pressure tolerance has . Grounds the most important indicators :

- **Compression coefficient (E)** — how much soil thickening indicates .
- **Gravity angle (φ)** — ground shift resistance represents .
- **Adhesion force (c)** — soil particles between each other connection power .
- **To the water satiety level** — ground under waters existence foundation depth and insulation requirements impact does .

Soft in the ground of the foundation bigger surface is required , because pressure equal if not distributed , foundation a person increases . Hard grunts and more pressure endure give takes .

3. Foundations classification

Foundations one how many criteria based on classified as :

a) The load distribution to the method according to :

- **Deep deep foundations** — heavy structures , earthquake danger was places For . Pile , tubular or with a well types there is .
- **Superficial shallow foundations** — the ground is stable if yes , low- rise in buildings is applied .

b) Construction to technology according to :

- **Monolith foundation** — in place lower done concrete construction
- **Prefabricated (prefabricated) foundation** - in the factory prepared reinforced concrete from blocks is collected .

c) Material according to :

- **Concrete**
- **Reinforced concrete**
- **Brick**
- **Rocky**
- **Mixed (composite) material**

4. Types of cargo and their to the foundation impact

From the building to the foundation to be held loads two to the point divided into :

- **Static loads** : Building own weight , walls , floors , roof and equipment .
- **Speaker Loads** : Wind , traffic vibration , earthquake , water flood

Foundation construction of the goods appearance and their to the ground how to pass looking at For example , an earthquake lateral displacements in the areas against measure as reinforced concrete with frame and deep pile-mounted foundations is used .

5. Earthquake resistance theory with dependency

Earthquake-resistant under construction foundations special calculations based on This is designed . regarding following factors into account is taken :

- **Foundation-soil system resonance frequency**
- **In the ground seismic waves fade away**
- **Foundation connections (insulators , shock absorbers)**

Foundations seismic forces acceptance to do and them minimal damage to the building with to deliver Therefore , the earthquake danger high was in the regions **isolated foundations** (e.g. elastomeric) piles) are used .

6. Construction technology and foundation to the quality impact

Any of the foundation quality indicators following to factors related to :

- **Design Accuracy** : Ground characteristics right analysis to do
- **Concrete and fittings Quality** : Brand , density , moisture level .
- **Construction Technology** : How much? to standards action to be done .
- **Insulation Works** : From humidity protection layers .

CONCLUSION

Foundations - any of the structure the most responsible and important constructive It is not only the load to the ground transmits , maybe whole of the building balanced to work ground creates . In the article seeing as it turns out , the foundation when choosing of the structure weight , soil properties , climate

conditions and seismic danger such as factors important role plays . Each foundation type known problems to the solution directed and them right choice — not only engineering issue , maybe economic and ecological efficiency also related to .

Also , modern construction technologies development with foundations now only as a load - bearing element there is no more , maybe energy saving , earthquake resistance increase , heat insulation such as to perform functions as well is being redirected . So so , any construction in the project foundation project deep scientific based without working exit , modern approaches application security , stability and far term exploitation is a guarantee .

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