

Encyclopedia of Engineering Geology

Living Edition

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Residual Soils

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Living reference work entry

First Online: **15 March 2017**

Received: 15 February 2017

Accepted: 27 February 2017

DOI (Digital Object Identifier): https://doi.org/10.1007/978-3-319-12127-7_237-1

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Synonyms

Alteration products (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Alteration%20products>); Lateritic soils (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Lateritic%20soils>); Saprolites (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Saprolites>); Weathering products (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Weathering%20products>)

Definition

Residual soil is the material resulting from the in situ weathering of the parent rock which has not been transported from its place of origin.

Residual soils are distributed throughout many regions of the world, such as Africa, South Asia, Australia, Southeastern North America, Central and South America, and considerable regions of Europe. The largest areas and thicknesses of these soils occur normally in humid tropical regions, such as Brazil, Nigeria, South India, Singapore, and the Philippines.

Characteristics

According to Duarte (2002), the diversity exhibited by the residual soils is due, not so much, to the lithology of the original rock, but mainly to external factors such as climate, topography, and vegetation cover; factors that provide distinctive weathering processes; and, consequently, distinctive weathering products – the residual soils. At the first International Conference on...

Keywords

Clay Permeability Hydrolysis Hydrated Silicate

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References

Blight GE (1997) In: Blight GE, Technical committee 25 on the properties of Tropical and Residual Soils of the International Society for Soil Mechanics and Foundation Engineering (eds) Mechanics of residual soils. Balkema, Rotterdam

[Google Scholar](#) (http://scholar.google.com/scholar_lookup?&author=GE.%20Blight&publication_year=1997)

Brand EW, Phillipson HB (1985) In: Technical committee 25 on the properties of Tropical and Residual Soils of the International Society for Soil Mechanics and Foundation Engineering (ed) Sampling and testing of residual soils. A review of international practice. Scorpion Press, Hong Kong

[Google Scholar](#) (http://scholar.google.com/scholar_lookup?&author=EW.%20Brand&author=HB.%20Phillipson&publication_year=1985)

Duarte IMR (2002) Solos residuais de rochas granitóides a Sul do Tejo. Características geológicas e geotécnicas [Residual soils of granitoid rocks to south of the Tagus River. Geological and geotechnical characteristics]. (Unpublished Doctoral Dissertation, in Portuguese). University of Évora, Évora, Portugal

[Google Scholar](#) (<https://scholar.google.com/scholar?q=Duarte%20IMR%20%282002%29%20Solos%20residuais%20de%20rochas%20granit%C3%B3ides%20a%20Sul%20do%20Tejo.%20Caracter%C3%ADsticas%20geol%C3%B3gicas%20e%20geot%C3%A9cnicas%20%5BResidual%20soils%20of%20granitoid%20rocks%20to%20south%20of%20the%20Tagus%20River.%20Geological%20and%20geotechnical%20characteristics%5D.%20%28Unpublished%20Doctoral%20Dissertation%2C%20in%20Portuguese%29.%20University%20of%20%C3%89vora%2C%20%C3%89vora%2C%20Portugal>)

Gomes CF (1988) Argilas. O que são e para que servem. [Clays. What they are and what they are for]. Gulbenkian Foundation, Lisboa

[Google Scholar](#) (http://scholar.google.com/scholar_lookup?title=Argilas.%20O%20que%20s%C3%A3o%20e%20para%20que%20servem.%20%5BClays.%20What%20they%20are%20and%20what%20they%20are%20for%5D&author=CF.%20Gomes&publication_year=1988)

Townsend FC (1985) Geotechnical characteristics of residual soils. J Geotech Eng 111(1):77–94

[CrossRef](#) ([https://doi.org/10.1061/\(ASCE\)0733-9410\(1985\)111%3A1\(77\)](https://doi.org/10.1061/(ASCE)0733-9410(1985)111%3A1(77)))

[Google Scholar](http://scholar.google.com/scholar_lookup?title=Geotechnical%20characteristics%20of%20residual%20soils&author=FC.%20Townsend&journal=J%20Geotech%20Eng&volume=111&issue=1&pages=77-94&publication_year=1985) (http://scholar.google.com/scholar_lookup?title=Geotechnical%20characteristics%20of%20residual%20soils&author=FC.%20Townsend&journal=J%20Geotech%20Eng&volume=111&issue=1&pages=77-94&publication_year=1985)

Vaughan PR (1988) Characterising the mechanical properties of in-situ residual soil. In: Proceedings of the II international conference on geomechanics in tropical soils, Singapore, vol 2, pp 469–487

[Google Scholar](https://scholar.google.com/scholar?q=Vaughan%20PR%20%281988%29%20Characterising%20the%20mechanical%20properties%20of%20in-situ%20residual%20soil.%20In%3A%20Proceedings%20of%20the%20II%20international%20conference%20on%20geomechanics%20in%20tropical%20soils%2C%20Singapore%2C%20vol%202%2C%20pp%20469%E2%80%93487) (<https://scholar.google.com/scholar?q=Vaughan%20PR%20%281988%29%20Characterising%20the%20mechanical%20properties%20of%20in-situ%20residual%20soil.%20In%3A%20Proceedings%20of%20the%20II%20international%20conference%20on%20geomechanics%20in%20tropical%20soils%2C%20Singapore%2C%20vol%202%2C%20pp%20469%E2%80%93487>)

Wesley LD (2010) Fundamentals of soil mechanics for sedimentary and residual soils. Wiley, New Jersey

[Google Scholar](http://scholar.google.com/scholar_lookup?title=Fundamentals%20of%20soil%20mechanics%20for%20sedimentary%20and%20residual%20soils&author=LD.%20Wesley&publication_year=2010) (http://scholar.google.com/scholar_lookup?title=Fundamentals%20of%20soil%20mechanics%20for%20sedimentary%20and%20residual%20soils&author=LD.%20Wesley&publication_year=2010)

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How to cite

Cite this entry as:

Duarte I.M.R., Rodrigues C.M.G. (2017) Residual Soils. In: Bobrowsky P., Marker B. (eds) Encyclopedia of Engineering Geology. Encyclopedia of Earth Sciences Series. Springer, Cham

About this entry

- DOI (Digital Object Identifier) <https://doi.org/10.1007/978-3-319-12127-7>
- Publisher Name Springer, Cham
- Online ISBN 978-3-319-12127-7
- eBook Packages [Earth and Environmental Science](#)
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