

Soil Erodibility Categories

One of the important variables used in the design of grassed waterways is the soil erodibility category. The following soil properties were used to determine the appropriate soil erosion category for nearly all soil types in Iowa:

- Unified Soil Classification
- Void Ratio
- Plasticity Index

The following table, Exhibit IA7-1, lists the soil type with its corresponding soil erosion category. This erosion category is used to determine the allowable effective soil stress whether designing a waterway using the charts in this chapter or using the Waterway Design Tool. Table 7-1 in this chapter gives the allowable effective stress for each of the four categories of soil erodibility.

EROSION CATEGORY FOR IOWA SOILS

Soil Type	Erosion Category	Soil Type	Erosion Category
Ackmore	Erodible	Blencoe	Very Erosion Resistant
Adair	Erosion Resistant	Blend	Very Erosion Resistant
Afton	Erosion Resistant	Blue Earth	Erodible
Ainsworth	Erodible	Bode	Very Erosion Resistant
Albaton	Very Erosion Resistant	Bolan	Erodible
Allamakee	Erodible	Bolan Variant	Erodible
Allendorf	Erosion Resistant	Brady	Easily Eroded
Amana	Erosion Resistant	Bremer	Very Erosion Resistant
Ambraw	Erosion Resistant	Brownton	Very Erosion Resistant
Ames	Erodible	Bucklick	Erosion Resistant
Angus	Erosion Resistant	Bucknell	Very Erosion Resistant
Ankeny	Erodible	Buckney	Erodible
Annieville	Erosion Resistant	Burcham	Erodible
Ansgar	Erodible	Burchard	Very Erosion Resistant
Anthon	Erosion Resistant	Burkhardt	Easily Eroded
Appanoose	Easily Eroded	Calamine	Erosion Resistant
Arbor	Erosion Resistant	Calco	Very Erosion Resistant
Aredale	Erodible	Calcousta	Very Erosion Resistant
Arenzville	Erosion Resistant	Caleb	Erosion Resistant
Arispe	Very Erosion Resistant	Camden	Erodible
Armstrong	Erosion Resistant	Caneek	Erodible
Arthur	Erosion Resistant	Caneek Variant	Easily Eroded
Ashdale	Erodible	Canisteo	Erosion Resistant
Ashgrove	Very Erosion Resistant	Canoe	Erodible
Atkinson	Erosion Resistant	Canoe Variant	Erodible
Atterberry	Erodible	Cantril	Erosion Resistant
Aureola	Easily Eroded	Carlow	Very Erosion Resistant
Backbone	Erodible	Carr	Erodible
Bassett	Erodible	Castana	Erosion Resistant
Bauer	Erosion Resistant	Cerlin	Erodible
Bearpen	Erodible	Chaseburg	Erodible
Beckwith	Erodible	Chelsea	Easily Eroded
Belinda	Easily Eroded	Chequest	Very Erosion Resistant
Belmann	Very Erosion Resistant	Churchtown	Erosion Resistant
Belview	Erosion Resistant	Chute	Easily Eroded
Benclare	Very Erosion Resistant	Clanton	Erodible
Bentonsport	Erodible	Clarinda	Very Erosion Resistant
Bertram	Erodible	Clarion	Erodible
Bertrand	Erodible	Clearfield	Very Erosion Resistant
Billett	Easily Eroded	Clinton	Erodible
Biscay	Erosion Resistant	Clyde	Erosion Resistant
Bixby	Erodible	Coggon	Erodible
Blake	Very Erosion Resistant	Cokato	Erodible

Exhibit IA7-1

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EROSION CATEGORY FOR IOWA SOILS

Soil Type	Erosion Category	Soil Type	Erosion Category
Coland	Very Erosion Resistant	Donnan Variant	Erodible
Collinwood	Erosion Resistant	Dorchester	Erodible
Collinwood Variant	Erosion Resistant	Doretton	Erodible
Colo	Very Erosion Resistant	Douds	Erodible
Coloma	Easily Eroded	Dow	Erodible
Cooper	Very Erosion Resistant	Downs	Erodible
Copaston	Very Erosion Resistant	Downs Variant	Erodible
Coppock	Erosion Resistant	Du Page	Erosion Resistant
Cordova	Erosion Resistant	Dubuque	Erodible
Corley	Very Erosion Resistant	Dunbarton	Erodible
Cornell	Erosion Resistant	Dunbarton Variant	Erosion Resistant
Corvuso	Erosion Resistant	Dundas	Erodible
Corwith	Erodible	Dunkerton	Erodible
Cosmos	Erosion Resistant	Edina	Erosion Resistant
Cott	Erosion Resistant	Egan	Erosion Resistant
Coyne	Erodible	Eitzen	Erodible
Creal	Easily Eroded	Eleroy	Erodible
Cresco	Erosion Resistant	Eleva	Easily Eroded
Cresken	Erosion Resistant	Ella	Erosion Resistant
Crippin	Erosion Resistant	Elon	Erosion Resistant
Crofton	Erosion Resistant	Elrick	Erodible
Curran	Erodible	Elrin	Erodible
Cylinder	Erosion Resistant	Elvers	Erodible
Cylinder Variant	Erosion Resistant	Elvira	Very Erosion Resistant
Danbury	Erodible	Ely	Erosion Resistant
Darfur	Erodible	Emeline	Erosion Resistant
Darwin	Very Erosion Resistant	Estherville	Erodible
Darwin Variant	Very Erosion Resistant	Everly	Erosion Resistant
Davis	Erosion Resistant	Exette	Erodible
Delft	Erosion Resistant	Exira	Very Erosion Resistant
Deloit	Erosion Resistant	Fairhaven	Erodible
Dells	Erosion Resistant	Farrar	Erodible
Dempster	Erosion Resistant	Faxon	Very Erosion Resistant
Denrock Variant	Erosion Resistant	Fayette	Erodible
Derinda	Erosion Resistant	Festina	Erodible
Dickinson	Erodible	Fieldon	Erodible
Dickman	Easily Eroded	Flagler	Erodible
Dinsdale	Erodible	Floyd	Erodible
Dinsmore	Erosion Resistant	Forney	Very Erosion Resistant
Dockery	Erodible	Fort Dodge	Erosion Resistant
Dodgeville	Erosion Resistant	Fostoria	Erosion Resistant
Dolbee	Very Erosion Resistant	Franklin	Erodible
Donatus	Erodible	Frankville	Erodible
Donnan	Easily Eroded	Fruitfield	Easily Eroded

EROSION CATEGORY FOR IOWA SOILS

Soil Type	Erosion Category	Soil Type	Erosion Category
Gale	Erosion Resistant	Jackson	Erodible
Galland	Erosion Resistant	Jacwin	Erosion Resistant
Galva	Erosion Resistant	Jameston	Erosion Resistant
Gara	Erosion Resistant	Joliet	Erodible
Garmore	Erodible	Judson	Erosion Resistant
Garwin	Very Erosion Resistant	Kalona	Erosion Resistant
Gasconade	Very Erosion Resistant	Kamrar	Very Erosion Resistant
Gilford	Erodible	Kandiyohi	Erosion Resistant
Gillett Grove	Erosion Resistant	Kasson	Erosion Resistant
Givin	Easily Eroded	Keg	Erodible
Gorin	Erodible	Kenmoor	Easily Eroded
Gosport	Erosion Resistant	Kennebec	Erosion Resistant
Goss	Erosion Resistant	Kensett	Erodible
Grable	Erodible	Kenyon	Erosion Resistant
Graceville	Erodible	Keomah	Erodible
Granby	Easily Eroded	Keosauqua	Erodible
Grantcenter	Erosion Resistant	Keswick	Erodible
Grundy	Very Erosion Resistant	Kilkenny	Very Erosion Resistant
Guckeen	Very Erosion Resistant	Killduff	Very Erosion Resistant
Haig	Very Erosion Resistant	Kingston	Erosion Resistant
Hamburg	Easily Eroded	Klinger	Very Erosion Resistant
Hanlon	Erodible	Klingmore	Very Erosion Resistant
Hanska	Erodible	Klum	Easily Eroded
Harcot	Erosion Resistant	Kniffin	Erosion Resistant
Harps	Erosion Resistant	Knoke	Very Erosion Resistant
Harpster	Very Erosion Resistant	Knox	Erodible
Havana	Easily Eroded	Kossuth	Very Erosion Resistant
Havelock	Very Erosion Resistant	Koszta	Erosion Resistant
Hawick	Easily Eroded	Lacrescent	Very Erosion Resistant
Hayden	Erosion Resistant	Ladoga	Erodible
Hayfield	Erosion Resistant	Lagonda	Erodible
Haynie	Erodible	Lakeport	Very Erosion Resistant
Hedrick	Erodible	Lamoni	Very Erosion Resistant
Hesch	Easily Eroded	Lamont	Erodible
Hixton	Erodible	Landes	Erodible
Holly Springs	Very Erosion Resistant	Lanyon	Erosion Resistant
Hoopeston	Erodible	Larpenteur	Erodible
Hoopeston Variant	Erodible	Lawler	Erodible
Hornick	Very Erosion Resistant	Lawson	Erodible
Humeston	Erodible	Lemond	Erodible
Huntsville	Erosion Resistant	Lerdal	Erosion Resistant
Ida	Easily Eroded	Lester	Easily Eroded
Inton	Erodible	Le Sueur	Erosion Resistant
Ion	Erodible	Letri	Very Erosion Resistant

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EROSION CATEGORY FOR IOWA SOILS

Soil Type	Erosion Category	Soil Type	Erosion Category
Lilah	Easily Eroded	Morconick	Erodible
Limecreek	Erosion Resistant	Mottland	Erodible
Linder	Easily Eroded	Moville	Erodible
Lindley	Erodible	Mt. Carroll	Erodible
Lineville	Erodible	Mt. Sterling	Erodible
Lineville Variant	Erosion Resistant	Mula	Erodible
Liscomb	Erosion Resistant	Munterville	Erosion Resistant
Liston	Very Erosion Resistant	Muscatine	Very Erosion Resistant
Lossing	Very Erosion Resistant	Mystic	Erosion Resistant
Lourdes	Erodible	Napa	Erosion Resistant
Luana	Erodible	Napier	Erosion Resistant
Luther	Erodible	Nasset	Erodible
Luton	Very Erosion Resistant	Nevin	Erodible
Lycurgus	Erosion Resistant	NewGlarus	Erosion Resistant
Macksburg	Very Erosion Resistant	Newvienna	Erodible
Madelia	Erodible	Nicollet	Erosion Resistant
Mahaska	Very Erosion Resistant	Niota	Erosion Resistant
Malvern	Very Erosion Resistant	Niota Variant	Erosion Resistant
Marcus	Very Erosion Resistant	Nira	Erosion Resistant
Marlean	Erosion Resistant	Nishna	Erosion Resistant
Marna	Erosion Resistant	Nodaway	Erodible
Marquis	Erosion Resistant	Nordness	Erosion Resistant
Marshall	Very Erosion Resistant	Northboro	Very Erosion Resistant
Marshan	Erosion Resistant	Norville	Very Erosion Resistant
Martinsburg	Erodible	Oakton	Easily Eroded
Massbach	Erosion Resistant	Ocheda	Erosion Resistant
Maxfield	Very Erosion Resistant	Ocheyedan	Erodible
Maxmore	Very Erosion Resistant	Okaw	Erodible
May City	Easily Eroded	Okoboji	Very Erosion Resistant
Mayberry	Very Erosion Resistant	Olin	Erodible
Mayer	Erosion Resistant	Olmitz	Erosion Resistant
McCreath	Erosion Resistant	Omadi	Erodible
McPaul	Erodible	Omsrud	Erodible
Medary	Erosion Resistant	Onawa	Very Erosion Resistant
Medary Variant	Erosion Resistant	Oran	Erodible
Millington	Easily Eroded	Orion	Erosion Resistant
Minden	Very Erosion Resistant	Orwood	Erodible
Minnetonka	Erodible	Ossian	Erosion Resistant
Modale	Erodible	Ostrander	Erodible
Moingona	Erodible	Otley	Very Erosion Resistant
Moneta	Erosion Resistant	Otter	Erosion Resistant
Monona	Erosion Resistant	Ottosen	Very Erosion Resistant
Montieth	Easily Eroded	Owego	Very Erosion Resistant
Moody	Very Erosion Resistant	Paintcreek	Erodible

EROSION CATEGORY FOR IOWA SOILS

Soil Type	Erosion Category	Soil Type	Erosion Category
Percival	Very Erosion Resistant	Sarpy	Easily Eroded
Perks	Easily Eroded	Sattre	Erodible
Pershing	Erosion Resistant	Saude	Erodible
Pillot	Erosion Resistant	Sawmill	Very Erosion Resistant
Pinicon	Erodible	Schapville	Erodible
Plano	Very Erosion Resistant	Schley	Erodible
Port Byron	Erodible	Scroll	Very Erosion Resistant
Primghar	Erosion Resistant	Seaton	Erodible
Protivin	Erosion Resistant	Seymour	Very Erosion Resistant
Quiver	Very Erosion Resistant	Shaffton	Erosion Resistant
Racine	Erosion Resistant	Shandep	Erosion Resistant
Racoon	Erosion Resistant	Sharpsburg	Very Erosion Resistant
Raddle	Erosion Resistant	Shelby	Very Erosion Resistant
Radford	Easily Eroded	Shellwood	Erodible
Ransom	Erosion Resistant	Shorewood	Erosion Resistant
Rathbun	Erodible	Shullsburg	Erodible
Rawles	Erodible	Sigglekov	Erodible
Readlyn	Very Erosion Resistant	Smithland	Very Erosion Resistant
Reedscreek	Erodible	Snider	Easily Eroded
Renova	Erodible	Sogn	Erosion Resistant
Revere	Erosion Resistant	Solomon	Very Erosion Resistant
Riceville	Erosion Resistant	Sparta	Easily Eroded
Richwood	Erodible	Sperry	Erosion Resistant
Ridgeport	Erodible	Spicer	Erosion Resistant
Ridgeton	Erodible	Spillco	Erosion Resistant
Rinda	Very Erosion Resistant	Spillville	Erosion Resistant
Ripon	Erodible	Steinauer	Very Erosion Resistant
Rocksan	Very Erosion Resistant	Storden	Easily Eroded
Rockton	Erodible	Strahan	Erodible
Rodney	Very Erosion Resistant	Stronghurst	Erodible
Roine	Erodible	Sunburg	Erodible
Rolfe	Easily Eroded	Taintor	Very Erosion Resistant
Rollingstone	Erodible	Talcot	Very Erosion Resistant
Roseville	Erodible	Tallula	Easily Eroded
Rossfield	Erosion Resistant	Tama	Erodible
Rowley	Erodible	Tell	Erosion Resistant
Rozetta	Erodible	Terril	Erosion Resistant
Rubio	Erodible	Thebes	Erosion Resistant
Rushmore	Very Erosion Resistant	Thorp	Erosion Resistant
Rushville	Erodible	Ticonic	Easily Eroded
Russell	Erodible	Tieville	Very Erosion Resistant
Sac	Erosion Resistant	Tilfer	Erosion Resistant
Salida	Easily Eroded	Timula	Erodible
Salix	Very Erosion Resistant	Titus	Very Erosion Resistant

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EROSION CATEGORY FOR IOWA SOILS

Soil Type	Erosion Category	Soil Type	Erosion Category
Toolesboro	Erosion Resistant	Zook	Very Erosion Resistant
Traer	Erodible	Zwingle	Erodible
Trent	Very Erosion Resistant	Zwingle Variant	Very Erosion Resistant
Tripoli	Very Erosion Resistant		
Truman	Erodible		
Turlin	Easily Eroded		
Tuskeego	Erodible		
Udolpho	Erosion Resistant		
Uturin	Erodible		
Vanmeter	Erodible		
Vesser	Erosion Resistant		
Village	Erodible		
Vinje	Erosion Resistant		
Volney	Erosion Resistant		
Vore	Very Erosion Resistant		
Wabash	Very Erosion Resistant		
Waucousta	Erosion Resistant		
Wacousta Variant	Very Erosion Resistant		
Wadena	Erodible		
Waldorf	Very Erosion Resistant		
Walford	Erodible		
Wapsie	Erodible		
Watkins	Erodible		
Watseka	Easily Eroded		
Waubeek	Erodible		
Waubonsie	Very Erosion Resistant		
Waucoma	Erodible		
Waukee	Erosion Resistant		
Waukegan	Erodible		
Webster	Very Erosion Resistant		
Weller	Erosion Resistant		
Wentworth	Very Erosion Resistant		
Whalan	Erodible		
Whittier	Erodible		
Wilmonton	Very Erosion Resistant		
Wilsey	Erodible		
Winneshiek	Erodible		
Winneshiek Variant	Erosion Resistant		
Winterset	Very Erosion Resistant		
Wiota	Erosion Resistant		
Woodbury	Very Erosion Resistant		
Worthen	Erosion Resistant		
Yellowriver	Erosion Resistant		
Zenor	Erodible		