

25 AGGREGATE SUBBASES

25-1.01 GENERAL

25-1.01A Summary

Section 25 includes specifications for placing aggregate subbase.

25-1.01B Definitions

Reserved

25-1.01C Submittals

Reserved

25-1.01D Quality Assurance

25-1.01D(1) General

Reserved

25-1.01D(2) Quality Control

Reserved

25-1.01D(3) Department Acceptance

The Department accepts AS based on aggregate gradation, R-value requirements, and sand equivalent requirements specified in section 25-1.02.

The Department accepts AS based on percent relative compaction specified in section 25-1.03E tested under California Test 231.

For Class 1–4 AS, if the aggregate gradation test results, the sand equivalent test results, or both comply with contract compliance requirements but not operating range requirements, you may continue placing AS for the remainder of the work day. Do not place additional AS until you demonstrate to the Engineer the AS to be placed complies with the operating range requirements.

For Class 1–4 AS, if the aggregate gradation test results, sand equivalent test results, or both do not comply with contract compliance requirements, remove the AS or request a payment deduction. If your request is authorized, \$2.00/cu yd is deducted for each noncompliant test result.

Each aggregate gradation and a sand equivalent test represents no more than 500 cu yd of AS or 1 day's production, whichever is smaller.

25-1.02 MATERIALS

25-1.02A General

Aggregate for Class 1, 2, 3, and 4 AS must be clean and consist of any combination of the following:

- Broken stone
- Crushed gravel
- Natural rough surfaced gravel
- Sand
- Reclaimed processed asphalt concrete, PCC, LCB, or CTB

If Class 5 is specified, the location for obtaining the material and gradation requirements are in the special provisions.

25-1.02B Class 1, Class 2, and Class 3 Aggregate Subbases

Aggregate gradation must be within the percentage passing limits for the sieve sizes shown in the following table:

Aggregate Gradation

Sieve size	Percentage passing					
	Class 1		Class 2		Class 3	
	Operating range	Contract compliance	Operating range	Contract compliance	Operating range	Contract compliance
3"	100	100	100	100	100	100
2 1/2"	90–100	87–100	90–100	87–100	90–100	87–100
No. 4	35–70	30–75	40–90	35–95	50–100	45–100
No. 200	0–20	0–23	0–25	0–29	0–30	0–34

The aggregate quality characteristics must comply with the requirements for the classes shown in the following table:

Aggregate Quality Characteristics

Quality characteristic	Requirement					
	Class 1		Class 2		Class 3	
	Operating range	Contract compliance	Operating range	Contract compliance	Operating range	Contract compliance
Sand equivalent, (min)	21	18	21	18	21	18
Resistance, (R-value, min)	--	60	--	50	--	40

25-1.02C Class 4 Aggregate Subbase

Reserved

25-1.02D Class 5 Aggregate Subbase

Reserved

25-1.03 CONSTRUCTION**25-1.03A General**

Apply water to the AS as needed for compaction.

25-1.03B Subgrade

Immediately before spreading the AS, the subgrade must comply with the specified compaction and elevation tolerance for the material involved and be free from loose or extraneous material.

You may fill areas of the subgrade lower than the grade established by the Engineer with AS.

Before placing biaxial geogrid, remove sharp objects that may come in contact with the material.

25-1.03C Placing Geosynthetic Materials

Section 25-1.03C applies if geosynthetic materials are shown.

Geosynthetic materials include filter fabric and biaxial geogrid.

If filter fabric is shown, place it on the subgrade.

Place biaxial geogrid if shown:

- Under manufacturer's instructions
- Longitudinally along the roadway alignment
- Without wrinkles

Overlap adjacent edges of geosynthetic material at least 2 feet. Overlap the ends of the rolls at least 2 feet in the direction AS is spread.

You may fold or cut geosynthetic material to conform to curves. If material is cut, overlap it at least 2 feet. You may hold the material in place with mechanical ties, staples, pins, or small piles of AS.

SECTION 25

AGGREGATE SUBBASES

Do not place stockpiles on geosynthetic material or place more material than can be covered in 72 hours.

Do not operate equipment or vehicles directly on filter fabric.

Do not operate equipment or vehicles directly on geogrid unless one of the following conditions is met:

Vehicles and equipment are:

Equipped with rubber tires

Operated under 10 mph

Operated to avoid sudden braking and sharp turns

At least 0.35 ft of AS has been placed, spread, and compacted on the material

Repair or replace any damaged geosynthetic material by placing a new piece of material over the damaged area with at least 3 feet of overlap.

25-1.03D Spreading

Deliver uniform mixtures of AS to the roadbed. Deposit AS in layers or windrows. Spread and shape the AS to such thickness that after watering and compacting, the completed AS is within the tolerances specified in section 25- 1.03E. When AS is spread and compacted the moisture content must be uniform and sufficient to obtain the required compaction. Avoid material segregation. AS must be free from pockets of coarse or fine material.

Where the subgrade is cohesionless sand and if authorized, you may dump AS in piles and spread it ahead in sufficient quantities to stabilize the subgrade.

Where the subbase thickness shown is 0.50 foot or less you may spread and compact the AS in one layer. Where the shown thickness is more than 0.50 foot, spread and compact in 2 or more layers approximately equal in thickness. The compacted thickness of any one layer must not exceed 0.50 foot. At locations inaccessible to spreading equipment, spread and compact AS by any means that will produce the specified results.

25-1.03E Compacting

Compact each AS layer to at least 95 percent relative compaction.

Where biaxial geogrid is shown, compact AS with either (1) a smooth-wheeled roller or (2) a rubber-tired roller. Do not use vibratory devices during compaction.

The finished surface of AS not covered, or covered by material paid for by weight, must not vary more than 0.08 foot above or below the grade established by the Engineer.

The finished surface of AS covered by material paid for by volume must not project above the grade established by the Engineer at any point.

Correct areas of AS that do not comply with the thickness shown if an equivalent thickness of overlying base will not compensate or request a payment deduction. If your request is authorized, the Engineer calculates the deduction by multiplying:

Deficient thickness less allowable tolerance

Planned width

Longitudinal distance of the deficient thickness

\$11.00/cu yd

25-1.04 PAYMENT

The payment quantity of aggregate subbase is determined by the dimensions shown.

The payment quantity does not include the volume of aggregate subbase used to fill low areas of the subgrade.