

TECHNO STONE

Premium Quality Stone Chips

Available at



Guide of Coarse Aggregates for
House & Building Concrete Constructions



Stone Mining

Controlled Crushing



Are you buying the
right aggregate
(Gitty) for your
Dream Project
verify now... ?

For Hassle Free & Quality Construction Use - **TECHNO STONE** Chips

The construction is a field with historical records of change, from the dwellings of early man... through the celebrated monuments of ancient civilizations to the marvels of modern times.

The quest continues for better methods and materials. The production of high quality "Gitty" marks an important part in construction.

To realize the qualitative change, it needs to be recognized that superior quality "Gitty" has a positive impact on every characteristics of building and its associated benefits.

Benefits of Techno stone "Gitty" :

- High strength concrete.
- Durable construction.
- Suitable for dams, roads, machine and pile foundations.
- The Techno stone "Gitty" is an ideal choice for all kinds of construction work for all residential and commercial buildings.
- Tested and used at Quality sites.



FEATURES OF PREMIUM QUALITY "GITTY" STONE CHIPS:

The quality of material starts from stone mines and its crushing on specified measurements with proper screening.

"Gitty" is a very important component of RCC and concrete work. The strength of the structure largely depends on the quality of stone chips. When you take the supply of "Gitty" you should ensure that the quality is according to the strength specifications required for construction.

For The Best trust Techno Stones

Basic selection characteristic of good quality "Gitty"

- ◆ Generally "Gitty" should be made of hard and dense stone crushed from black basalt rock belts.
- ◆ It should be free from lumps of earth, grass, decayed vegetation, silt and sand particles etc.
- ◆ Often there are "Kachha" stone pieces in "Gitty" which are generally yellow or reddish in color. When mixed with water these pieces generally get broken and form as clay.
- ◆ "Gitty" should be screened properly having minimum sand and dust particles.
- ◆ It should be a bright clean and dry crushed material. Often in rainy season old stock acquires slush coat of soil on it.
- ◆ For house construction works you should use "Gitty" having 6mm to 10mm and 10mm to 20mm sizes mixed in equal proportions.
- ◆ Most liked shade is dark gray and mostly triangular shape with mixed sizes.

For 100% assurance of correct material rely on Techno stone.

HOW TO PREVENT THE QUALITY AND MEASUREMENT LOSSES :

- ◆ The following precautions should be used while procuring the material from the supplier. This may help you save substantial cost.
- ◆ Watch out for the sub standard material. Even if the supplier tells you that he has carried the best material you should check the quality using the guidelines above. The strength of RCC may reduce by 10 to 25 % if the "Gitty" used of below specified standards in construction. Your best friend - Techno stone
- ◆ About Measurement & Wrong Calculation: The supplier or truck owner may try to use incorrect calculation method while calculating the final payment. For example if the measurement is 3 feet 5 Inches, he calculates the payment by multiplying 3.6 to the rate where as he should have used 3.5.

The suppliers measure the height of the truck randomly at one place while calculating the material quantity being supplied.

- (a) You should measure the height of the truck from 2 to 3 places and then take an average.
- (b) Never take the measurement of the material at the ground after unloading as this will distort the calculations and you will end up paying more money.

- ◆ Rate : You should collect rates from nearest Ultra Tech Building Solutions outlet. This exercise will not only help you to get good quality material but will also help you figure out the prevailing rates for correct measured and Premium quality materials.
- ◆ Standard Lorry size is 400 sq.ft. customarily few merchants unload some material at their storage yard or lorry is specially made in smaller size. Hence lorry should be measured at randomly. Normally measurement is in cubic meter. (Length x Breadth x Depth) = Cubic Meter. For assured measurement insist on techno stone - Correct material and measurement . Aggregates : IS: 383 - 1970/1993

Specifications for coarse aggregate & fine aggregate for concrete zone I, II, III, IV,

Coarser Sampling : IS : 2430 - 69 & IS 2-1960
(rounding off values)

Finer coarse aggregate : Retaining on 4.75 mm sieve.

Fine aggregate : Passing through 4.75 mm sieve.

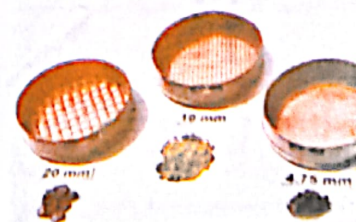
Aggregates : uncrushed from natural disintegration of rock crushed from rocks/graveis/ stones. Combination of above two

- ◆ The rounded shape has minimum surface area for the same mass than other shapes and therefore requires minimum cement paste for bonding as compared to other shapes. Hence, rounded aggregate to cement ratio, in a concrete mix, for the same workability will be higher than any other aggregate to cement ratio.
- ◆ Flaky and elongated shapes have larger surface area for the same mass as compared to rounded or cubical shapes. More cement paste is required to coat the surface and hence the water demand is much more for the flaky and elongated aggregates. These shapes are therefore generally not preferred in the concrete mixes.
- ◆ Concrete produced using flaky and elongated aggregates will be prone to segregation and have poor surface and high cement and sand demand.
- ◆ Generally rounded, irregular rounded and cubical shapes are preferred in concrete mixes.

INSIST ON BUYING TECHNO STONE FOR CORRECT GRADING OF AGGREGATES :

Grading of aggregated is important as they can influence various properties of concrete such as cohesion, water demand, workability and strength. Aggregates should be well graded and should be consistent in their grading.

It is extremely important that fine aggregates are well graded as they generally serve as void fillers between the coarse aggregates. The fine



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aggregates comprise of various sizes from 4.75 mm to very fine 150 micron. The portion of the aggregate below 600 micron size are finer fines and they greatly influence the cohesiveness, water demand, workability and permeability as their specific surface per unit volume is much greater than other aggregate sizes.

As fine aggregates content or as finer fines content increases the specific surface greatly increases and therefore cement paste required to coat these fines is more. Hence, water requirement will also be more to coat the surfaces of aggregates with cement and water glue.

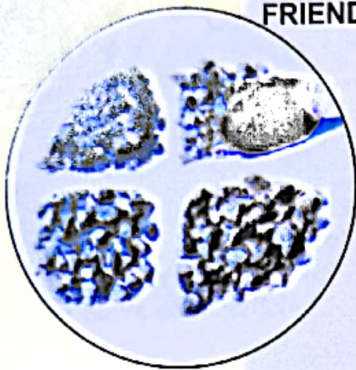
IS 383 specifies four ranges or zones for fine aggregate grading. If the sand is coarse, then the water requirement will be less and if the sand is fine then the water requirement will be more to achieve the same workability.

Coarse sand will not impart cohesiveness to the mix which in turn would cause segregation and bleeding.

Fine sand will impart good cohesiveness but would need more water for workability purpose.

Coarse sand will not give good finish and therefore the mix must have additional sand than normally necessary. Fine sand will give good finish if the mix is workable and compactable.

If a particular sieve size is not present in aggregates they are called gap graded. Sand which has gap grading is generally not preferred to the one which is uniformly graded. Gap grading can create deficiency in cohesiveness, permeability and surface finish.



FRIEND OF CONCRETE - **TECHNO**STONE CHIPS " GITTY" SAMPLING :

The samples of aggregates need to be obtained using the following steps Scoop out some of the aggregates from different places at different heights in the stock pile. Care should be taken not to scoop out segregated materials from near the bottom of the stack or at the top of the stack. If variations observed in the stack are large more scoops will have to be taken from different locations.

Mix well the scooped samples and from a round conical heap on a clean hard surface.

The heap must then be flattened and divided into four equal quarters on a clean, flat and hard surface

Throw away the opposite quarters and mix the other two quarters.

Once again divide the mixed aggregates from two selected quarters and further continue quartering till quantity needed for various tests is obtained.

COARSE AGGREGATE :

Shall be hard, strong, dense, durable, clear, free from veins & adherent coating, free from disintegrated pieces like Alkali, Organic matter and other deleterious matter. If possible, flakiness & elongation should be avoided.

DELETERIOUS MATERIALS:

Pyrites of Coal, Ignite, Mica, Shale, Clay, Alkali, Soft fragments, Seashells & Organic impurities.

AGGREGATE CRUSHING VALUE:

Not more than 30% for wearing surfaces i.e. Roads, Runways, Pavements etc, & Not more than 45% for others.

IMPORTANT :

The most important is "Gitty" coarse aggregates should be free from alkali reactivity. which may cause corrosion to reinforced steel used in constructions.

SHAPE OF AGGREGATE :

| Sieve size | ROUNDED | IRREGULAR | CRUSHED | Figure |
|------------|---------|-----------|---------|--------|
| 80 | | | | 80 |
| 40 | | | | 40 |
| 20 | | | | 20 |
| 10 | | | | 10 |
| 4.75 | | | | 4.75 |

Aggregates both natural and crushed are available in all types of shapes.

One can seldom find two aggregates which are identical to each other in shape and size.

The aggregate shapes can be broadly classified as follows in order of desirability.

- Rounded
- Irregular rounded
- Cubical
- Flaky angular
- Elongated
- Flaky elongated

Use **TECHNO**STONE to give the best
Concrete for our your Dream Project . . .

Available at : UBS & Select Stores.

