Collenchyma

Collenchyma is specialised for strengthening the plant,especially around the edge of the stem just below the epidermis.The cells are similar to parenchyma but fit together more closely.Also the cellulose wall is thicker in the corners of the cell for extra strength.Collenchyma cells do not contain lignin,so are living and flexible.There may be small air spaces between the cells.

Collenchyma tissue is suited to its function.

- The walls with thickened corners help to support the plant but flexible enough to let it bend.
- The parts of the walls that are not thickened allow dissolved nutrients and water to pass through the cells.
- The air spaces allow gases such as carbon dioxide and oxygen to move through the plant.

Sclerenchyma

Sclerenchyma is also specialised for strengthening the plant.The walls of sclerenchyma are strengthening with waterproof lignin.The lignin makes the cells strong but because it is waterproof,the contents of the cells die.Sclerenchyma tissue often occurs near the soft phloem and young xylem to help support them.

Sclerenchyma tissue is suited to its function

- The evenly thickened cell walls support and protect the soft tissues of the plant.
- The lignified cell walls are very strong and make the plant rigid.
- Patches of sclerenchyma can act as supports for the plant because the cells are packed tightly together and there are no air spaces.

Epidermal tissues

The epidermis is the outer layer of cells of the plant.The epidermis protects the inner cells and helps to support the plant organs.Epidermal cells are tight fitting and often have a thick outer wall.They make a waxy,waterproof layer called the cuticle on the outside that makes them waterproof and helps them to resist disease.

Epidermal tissue is suited to its functions.

- The strong tight fitting epidermal cells make a strong outer layer that helps to support and protect the plant.
- The outer thickened wall also helps to protect and support the inner tissues of the plant.