



Material Flow

Progressing with green procurement at construction sites

Up to fiscal 2008, Kajima had established targets for improving its green procurement rates by weight for five materials: asphalt, aggregate, cement, ready-mixed concrete, and steel. From fiscal 2009, the Company revised its medium-term goals, expanding the number of targeted materials to 10 items, and indexing their use at all construction sites. Once the data for the usage rates, and their stated reasons, was collected from each site, the Company focused in 2010 on 5 (see chart, middle row) of the 10 targeted materials, which showed relatively high use, and incorporated procurement proposals from the worksites themselves. The data, however, also indicated an average 30% or higher of sites did not use the 5 due to incomplete green procurement implementation. The Company intends to improve the usage rates in fiscal 2011 by effecting a more complete understanding of green procurement.

Green procurement

| Targeted material | Fiscal 2010 survey results and fiscal 2011 actions |
|---|--|
| Earth from other sites | 80–90% of sites used these materials. → Kajima will continue these activities. |
| Recycled aggregate | |
| Recycled ascon | |
| Blast furnace cement | <ul style="list-style-type: none"> Average of 31% of sites used the 5 targeted materials (contributing factors: specifications directions, 18%; construction site proposals, 13%) → Aim to improve usage rates through more construction site proposals In 2010, usage rates showed a slight increase due to proposals of OA flooring and recycled carpet. However, the total rate remained unchanged. → Set a goal of 18% usage rate via proposals. |
| Blast furnace concrete | |
| Recycled materials for framework assembly | |
| OA floors made from recycled materials | |
| Carpets made from recycled materials | |
| Recycled concrete | Usage rate: 5% for recycled concrete, 17% for fertilizer made from sludge. → Only a few construction sites are applicable regarding these materials. We will continue to collect results and data. |
| Organic fertilizer made from sludge | |

| INPUT | | | |
|--------------------------------|--------------------------------------|--------------------------------------|------------------------|
| Principal energy usage volumes | | Construction | |
| Fossil fuels | Diesel oil | 48,431 kl | |
| | Kerosene | 2,099 kl | |
| Electricity | 174,310,000 kWh | | |
| Principal materials | Total usage | Green Procurement volume | Green Procurement rate |
| Steel products | 428,000 t | 329,000 t | 77% |
| Cement | 303,000 t | 97,000 t | 32% |
| Ready-mixed concrete* | 864,000 t (5,680,000 t) | 157,000 t (1,031,000 t) | 18% |
| Aggregate | 805,000 t | 458,000 t | 57% |
| Asphalt | 40,000 t | 27,000 t | 66% |
| Total | 2,441,000 t (7,256,000 t) | 1,067,000 t (1,942,000 t) | 44% |

* The figures for ready-mixed concrete only include the cement portion. Figures in parentheses represent the total amount of concrete.

| OUTPUT | | |
|---|--------------------------|------------------|
| CO ₂ emission volume | | |
| 195,000 t | | |
| Construction surplus soil (hauled off site) | | |
| 1,478,000 t | | |
| Construction waste | | |
| Volume | Final disposal volume | |
| 2,061,000 t | 296,997 t | |
| Volume of hazardous materials generated | | |
| Material containing asbestos | CFCs and halon recovered | Florescent tubes |
| 6,344.7 t | 6.4 t | 42.0 t |