

ICS 65.020
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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

LY/T 3179-2020

**Technical regulation for the restoration of degraded protective
forest**

退化防护林修复技术规程

(English Translation)

Issued on: March 30, 2020

Implemented on: October 1, 2020

Issued by: State Forestry and Grassland Administration

Table of Contents

Foreword	
1 Scope	
2 Normative references	
3 Terms and definitions	
4 Repair principles	
5 Repair objects	
6 Repair types and methods	
7 Biodiversity protection	
8 Survey Design	
9 Quality Evaluation	
10 File Management	
Appendix A (Normative Appendix) Status Quo Survey Form of Degraded Shelterbelt Restoration Subgroup	
Appendix B (Normative Appendix) Degraded Shelterbelt Restoration Small Shift Operation Design Table	

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Appendices A and B of this standard are normative appendices.

This standard was proposed by the State Forestry and Grassland Administration.

This standard is under the jurisdiction of the National Afforestation Standardization Technical Committee (SAC/TC385).

Drafting organizations of this standard. National Forestry and Grassland Administration Investigation, Planning and Design Institute, National Forestry and Grassland Administration Ecological Protection and Restoration Division, Zhangjiakou Forestry and Grassland Bureau of Hebei Province, Huancui District Natural Resources Bureau of Weihai City, Shandong Province, Chifeng City, Inner Mongolia Autonomous Region Forestry and Grassland Bureau of Aohan Banner, Zhaosu Branch of State-owned Forestry Administration of Western Tianshan Mountains, Xinjiang Uygur Autonomous Region.

1 Scope

This standard specifies the restoration principles, objects, types and methods of restoration, and biodiversity conservation Technical requirements for protection, survey design, quality evaluation, file management, etc.

This standard applies to the restoration of degraded protection forests nationwide.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version Applies to this document. For undated references, the latest version (including all amendments) applies to this document.

GB 6000 Seedling quality classification of main afforestation tree species GB/T 14175 Forest Tree Introduction GB/T 15163 Technical Regulations for Closing Hills (sand) for Forestation GB/T 15776 Technical Regulations for Afforestation GB/T 15781 Forest Tending Regulations GB/T 18337.1 Guidelines for the Construction of Ecological Public Welfare Forests GB/T 26424 Technical Regulations for Forest Resources Planning, Design and Investigation LY/T 1000 container seedling technology LY/T 1646 Forest Harvesting Regulations LY/T 2786 Technical Regulations for Restoration of Degraded Stands of Three North Shelterbelt

3 Terms and definitions

The following terms and definitions apply to this standard.

Degraded Protective forest Due to physiological decay, natural disasters, changes in the external environment, excessive man-made interference, etc., forest stands enter early or accelerate in the decay stage, phenomena such as withering, dying, poor growth, etc. appear, resulting in structural imbalance, reduced stability, decreased function and even Shelter forests that are lost and difficult to recover naturally.

Restoration of Degraded Protective forest Follow the laws of nature and adopt measures such as replacement, selective cutting and replanting, tending, gradual progress, and enclosure for degraded protection forests to promote forest protection Forms a normal growth and development trend, and gradually recovers to a state close to the state before degradation or to a better zonal forest top community Orderly development of forest management activities.

Replacement Restoration on the same forest land, the restoration measures to replace the original trees or the target tree species in one time or in batches, including clear cutting and regeneration, Gradual cutting and regeneration, afforestation and regeneration under the canopy.

Restoration by Selective Cutting and Replanting According to the distribution characteristics of dead wood, dying wood, and damaged wood, after single-plant felling or group felling, depending on the forest stand Replanting and re-seeding restoration measures should be carried out for replanting and reseedling.

Gradual Restoration

Under the premise of relatively stable maintenance and protection functions, the degraded forest belt (net) shall be taken at certain intervals (≥ 5 years).

Repair measures to gradually restore or improve the protective function of isolated plants, separated belts, half belts, broken belts, and out-of-band renewal.

4.1 Zoning policy, classification repair

The degraded protection forests in special protection areas specified in GB/T 18337.1 shall be completely closed, and special protection areas shall be Degraded protection forests in other areas outside the country are divided into degraded natural secondary protection forests and degraded artificial protection forests according to their origins.

The restoration methods of degraded natural secondary protection forests are mainly enclosed and replanted. For degraded artificial protection forests, environmental conditions, Reasonable selection of repair methods such as degradation.

4.2 Utilize nature and green restoration

On the basis of respecting and understanding nature, making full use of nature, artificially assisting natural restoration potential is inhibited or damaged Damaged degraded shelterbelts repair themselves. In order to speed up the restoration process, artificial replanting and reseedling measures can be supplemented to promote restoration.

Cultivate and form forest communities with high naturalness and strong stability, and improve the effectiveness, economy and energy saving of restoration of degraded shelterbelts.

4.3 Logging according to law and scientific restoration

Logging is carried out in strict accordance with the natural forest protection and public welfare forest management policies and technical requirements. After logging, depending on the forest stand Carry out scientific replanting and reseedling in accordance with business objectives. The selection of tree species should be given priority to those that can grow mutually beneficially and coexist with preserved trees.

Good native tree species, arable for arbor, or irrigated for irrigation.

4.4 Priority protection and reasonable restoration

Strengthen protection forests and natural forests in special protected areas, as well as key protected wild plants, key protected wild animals and other the protection of habitats, and restoration under the premise of relatively stable maintenance and protection functions, reasonable selection of restoration methods, and reasonable safety Schedule restoration time and procedures to reduce disturbance and disturbance to key protected wild animals and plants, and avoid fragmentation of their habitats.

5.1 Defining standards

Shelterbelts that meet one of the following characteristics and are difficult to recover naturally can be classified as degraded shelterbelts.

- a) Withered shoots, diseased rot and other physiological senescence characteristics are obvious. More than two-thirds of the trees with dead shoots account for more than 20% (inclusive) on the top, the forest stands with depleted trees.
- b) The trunk is broken or split, or fell down, broken (withered) or more than two-thirds of the tip, etc.

Forest stands in which the proportion of harmful forest trees is more than 40% (inclusive).

- c) Forests where forestry quarantine pests occur and cannot be eradicated by control measures within 3 years.
- d) Not due to the competitive growth of individual forest trees, leading to tree growth failure and death, dead wood and dying wood the proportion of the number of plants is more than 5% (inclusive), and the forests showing a reverse development trend are expanding year by year.
- e) Patches or clusters of death appear, forming forest clearings, canopy density drops below 0.5, and forest trees are unevenly distributed (The Three North Shelterbelts implement LY/T 2786 regulations).
- f) Many plants and bands (strips) died, causing the permeability to increase to 0.6 (inclusive) or more, or the length of the continuous broken band the average tree height of the forest belt is more than 2 times, and the total length of the missing belt accounts for more than 20% (inclusive) of the entire forest belt length, A forest belt with broken forests and poor protection.
- g) Due to aging and dying year after year, it is difficult to maintain a stable state, the coverage drops below 40%, the distribution is uneven, and the protection Special shrubs whose functions continue to decline.